


United States Nuclear Regulatory Commission Official Hearing Exhibit	
In the Matter of:	FLORIDA POWER & LIGHT CO. (Turkey Point Nuclear Generating Units 6 and 7)
	Commission Mandatory Hearing
	Docket #: 05200040 05200041
	Exhibit #: NRC-008K-A-MA-CM01 Identified: 12/12/2017
	Admitted: 12/12/2017 Withdrawn:
	Rejected: Stricken:
Other:	

NRC-008K-A



Florida Power and Light Company

New Nuclear Projects

Quality Assurance Program Description

FPL-2

Florida Power and Light Company

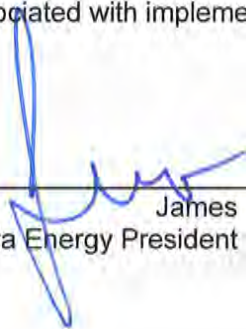
POLICY STATEMENT

Florida Power and Light (FPL) shall design, procure, construct and operate nuclear plants in a manner that will ensure the health and safety of the public and workers. These activities shall be performed in compliance with the requirements of the Code of Federal Regulations (CFR), the applicable Nuclear Regulatory Commission (NRC) Facility Operating Licenses, and applicable laws and regulations of the state and local governments.

The FPL New Nuclear Projects (NNP) Quality Assurance Program (QAP) is the Quality Assurance Program Description (QAPD) provided in this document and the associated implementing documents. Together they provide for control of FPL activities that affect the quality of safety-related nuclear plant structures, systems, and components (SSCs) and include all planned and systematic activities necessary to provide adequate confidence that such SSCs will perform satisfactorily in service. The QAPD may also be applied to certain equipment and activities that are not safety-related, but support safe plant operations, or where other NRC guidance establishes program requirements.

The QAPD is the top-level policy document that establishes the manner in which quality is to be achieved, and presents FPL's overall philosophy regarding achievement and assurance of quality. Implementing documents assign more detailed responsibilities and requirements and define the organizational interfaces involved in conducting activities within the scope of the QAP. Compliance with the QAPD and implementing documents is mandatory for personnel directly or indirectly associated with implementation of the FPL NNP QAP.

Signed:



James L. Robo
NextEra Energy President and Chief Executive Officer

Florida Power and Light Company

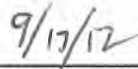
FPL-2

Revision 3

Approved By:



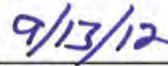
D. C. Lowens
Director Nuclear Assurance



Date



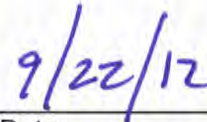
W. D. Maher
For Vice President – New Nuclear Projects



Date



M. K. Nazar
Chief Nuclear Officer, FPL



Date

TABLE OF CONTENTS

POLICY STATEMENT	2
PART I INTRODUCTION.....	6
SECTION 1 GENERAL	6
PART II QAPD DETAILS.....	8
SECTION 1 ORGANIZATION.....	8
1.1 NNP Construction and Startup Organization	9
1.2 FPL Nuclear Fleet Corporate Operating Organization	13
1.3 FPL Nuclear Fleet Site Organization	18
1.4 Authority	22
Figure 1-1: NPP Construction and Startup Organization	23
Figure 1-2: FPL Nuclear Fleet Corporate Operating Organization	24
SECTION 2 QUALITY ASSURANCE PROGRAM	26
2.1 Responsibilities	27
2.2 Delegation of Work	27
2.3 Site-specific Safety-Related Design Basis Activities	27
2.4 Periodic Review of the Quality Assurance Program	28
2.5 Issuance and Revision to Quality Assurance Program	28
2.6 Personnel Qualifications.....	28
2.7 NQA-1-1994 Commitment / Exceptions	29
SECTION 3 DESIGN CONTROL	31
3.1 Design Verification.....	31
3.2 Design Records.....	32
3.3 Computer Application and Digital Equipment Software.....	32
3.4 Setpoint Control.....	32
3.5 NQA-1-1994 Commitment.....	33
SECTION 4 PROCUREMENT DOCUMENT CONTROL	34
4.1 NQA-1-1994 Commitment / Exceptions	34
SECTION 5 INSTRUCTIONS, PROCEDURES, AND DRAWINGS.....	36
5.1 Procedure Adherence.....	36
5.2 Procedure Content	36
5.3 NQA-1-1994 Commitment.....	36
SECTION 6 DOCUMENT CONTROL	37
6.1 Review and Approval of Documents	38
6.2 Changes to Documents	38
6.3 NQA-1-1994 Commitment.....	38
SECTION 7 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES.....	39
7.1 Acceptance of Item or Service.....	39
7.2 NQA-1-1994 Commitment / Exceptions	40
SECTION 8 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS.....	43
8.1 NQA-1-1994 Commitment	43
SECTION 9 CONTROL OF SPECIAL PROCESSES	44
9.1 NQA-1-1994 Commitment	44
SECTION 10 INSPECTION.....	45
10.1 Inspection Program	45
10.2 Inspector Qualification	45
10.3 NQA-1-1994 Commitment / Exceptions	46
SECTION 11 TEST CONTROL.....	47
11.1 NQA-1-1994 Commitment	47
11.2 NQA-1-1994 Commitment for Computer Program Testing	47

TABLE OF CONTENTS (CONTINUED)

SECTION 12	CONTROL OF MEASURING AND TEST EQUIPMENT	48
12.1	Installed Instrument and Control Devices.....	48
12.2	NQA-1-1994 Commitment / Exceptions	48
SECTION 13	HANDLING, STORAGE, AND SHIPPING	49
13.1	Housekeeping.....	49
13.2	NQA-1-1994 Commitment / Exceptions	50
SECTION 14	INSPECTION, TEST, AND OPERATING STATUS	52
14.1	NQA-1-1994 Commitment	52
SECTION 15	NONCONFORMING SERVICES, MATERIALS, PARTS, OR COMPONENTS.....	53
15.1	Reporting Program	53
15.2	NQA-1-1994 Commitment	53
SECTION 16	CORRECTIVE ACTION	54
16.1	Reporting Program	54
16.2	NQA-1-1994 Commitment	54
SECTION 17	QUALITY ASSURANCE RECORDS	55
17.1	Record Retention.....	55
17.2	Electronic Records	55
17.3	NQA-1-1994 Commitment / Exceptions	55
SECTION 18	AUDITS	56
18.1	Performance of Audits	56
18.2	Internal Audits.....	57
18.3	NQA-1-1994 Commitment	58
PART III	NONSAFETY-RELATED SSC QUALITY CONTROL	59
SECTION 1	NON-SAFETY RELATED SSCs - SIGNIFICANT CONTRIBUTORS TO PLANT SAFETY	59
SECTION 2	NON-SAFETY RELATED SSCs CREDITED FOR REGULATORY EVENTS.....	62
PART IV	REGULATORY COMMITMENTS	63
REGULATORY GUIDES	63
STANDARDS	64
PART V	ADDITIONAL QUALITY ASSURANCE AND ADMINISTRATIVE	
CONTROLS FOR THE PLANT OPERATIONAL PHASE	65	
SECTION 1	DEFINITIONS.....	65
SECTION 2	REVIEW OF ACTIVITIES AFFECTING SAFE PLANT OPERATION.....	66
SECTION 3	OPERATIONAL PHASE PROCEDURES.....	69
SECTION 4	CONTROL OF SYSTEMS AND EQUIPMENT IN THE OPERATIONAL PHASE.....	76
SECTION 5	PLANT MAINTENANCE	77

Quality Assurance Program Description

PART I INTRODUCTION

SECTION 1 GENERAL

The Florida Power & Light Company (FPL) New Nuclear Projects (NNP) Quality Assurance Program Description (QAPD) is the top-level policy document that establishes the quality assurance policy and assigns major functional responsibilities for construction, pre-operation and operations activities conducted by or for FPL. The QAPD describes the methods and establishes quality assurance (QA) and administrative control requirements that meet 10 CFR 50, Appendix B and 10 CFR 52. The QAPD is based on the requirements and recommendations of ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications," Parts I, II and III, as specified in this document.

The QAP is defined by the NRC-approved regulatory document that describes the QA elements (i.e. the QAPD), along with the associated implementing documents. Procedures and instructions that control NNP activities will be developed prior to commencement of those activities. Policies establish high-level responsibilities and authority for carrying out important administrative functions which are outside the scope of the QAPD. Procedures establish practices for certain activities which are common to all FPL organizations performing those activities so that the activity is controlled and carried out in a manner that meets QAPD requirements. Procedures specific to a site, organization, or group establish detailed implementation requirements and methods, and may be used to implement policies or be unique to particular functions or work activities.

1.1 Scope / Applicability

The QAPD applies to construction, pre-operation and operations activities affecting the quality and performance of safety-related structures, systems, and components, including, but not limited to:

Designing	Receiving	Pre-Operational Activities (Including ITAAC)
Siting	Storing	Operating
Procuring	Constructing	Maintaining
Fabricating	Erecting	Repairing
Cleaning	Installing	Modifying
Handling	Inspecting	Refueling
Shipping	Testing	Training
	Startup	Decommissioning

Safety-related SSCs, under the control of the QAPD, are identified by design documents. The technical aspects of these items are considered when determining program applicability, including, as appropriate, an item's design safety function. The QAPD may be applied to certain activities where regulations other than 10 CFR 50 and 10 CFR 52 establish QA requirements for activities within their scope.

Quality Assurance Program Description

PART I INTRODUCTION (CONTINUED)

The policy of FPL is to assure a high degree of availability and reliability of the nuclear plants while ensuring the health and safety of its workers and the public. Towards this end, selected elements of the QAPD are also applied to certain equipment and activities that are not safety-related, but support safe, economic, and reliable plant operations, or where other NRC guidance establishes quality assurance requirements. Implementing documents establish program element applicability.

The definitions provided in ASME NQA-1–1994, Part I, Section 1.4, apply to select terms as used in this document.

PART II QAPD DETAILS

SECTION 1 ORGANIZATION

This section describes the FPL organizational structure, functional responsibilities, levels of authority and interfaces for establishing, executing, and verifying QAPD implementation. The organizational structure includes corporate and on-site functions for NNP including interface responsibilities for multiple organizations that perform quality-related functions. Implementing documents assign more specific responsibilities and duties, and define the organizational interfaces involved in conducting activities and duties within the scope of the QAPD. Management gives careful consideration to the timing, extent and effects of organizational structure changes.

The FPL management senior position responsible for the Quality Assurance organization is responsible to size the Quality Assurance organization commensurate with the duties and responsibilities assigned.

The FPL NNP organization is responsible for new nuclear plant licensing, engineering, procurement, construction, startup and operations development activities. There are several organizations within FPL which implement and support the QAPD. These organizations include, but are not limited to, the NNP organization, Corporate Services and Quality Assurance.

Design, engineering and construction services are provided to the FPL New Nuclear Projects organization by two primary contractors in accordance with their own QAPDs. These two contractors are the A/E Firm and the NSSS vendor.

No later than six months prior to fuel load of the unit, those positions which are identified for Operations will be staffed and have the appropriate authority required to perform operations activities. It is anticipated that even after fuel load, construction activities will be ongoing. Those positions required to support these activities will retain their applicable construction/preoperation responsibilities until it is deemed that they are no longer necessary. As the construction of systems (or portions thereof) is completed, control and authority (including oversight, configuration and operations) is transferred from the contractor to the FPL departments in the operations phase. During the transition, responsibilities will be clearly defined in instructions and procedures to ensure appropriate authority is maintained for each SSC.

The following sections describe the reporting relationships, functional responsibilities and authorities for the organizations that implement and support the NNP QA Program. The NNP construction and startup organization and the FPL Fleet operating organization are shown in Figures 1-1, 1-2 and 1-3, respectively.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

1.1 NNP Construction and Startup Organization

1.1.1 NextEra Energy President and Chief Executive Officer (CEO)

This position is responsible for overall corporate policy and provides executive direction and guidance for the corporation as well as for the promulgation of corporate policy through the Company's senior management staff. The President and CEO is responsible for developing, implementing, and verifying execution of the FPL Quality Assurance Program. Responsibility for implementing the FPL Quality Assurance Program is delegated to the Chief Nuclear Officer and the authority for developing and verifying execution of the program is delegated to the Director Nuclear Assurance.

1.1.2 Executive Vice President – Engineering, Construction and Corporate Services

This position reports to the CEO and is the project executive responsible for construction of the new nuclear plant. This position is the interface between the NNP project and the senior executive staff.

1.1.3 Vice President – New Nuclear Projects

The Vice President – New Nuclear Projects, reports to the Executive Vice President - Engineering, Construction and Corporate Services and is responsible for the overall safe and efficient licensing, engineering, construction and pre-operational test of the New Nuclear Projects, and for the implementation of quality assurance requirements in the areas specified by the QAPD.

1.1.4 Executive Vice President and Chief Nuclear Officer (CNO)

This position reports to the CEO and has overall responsibility for the implementation of the QAP and for Nuclear Division activities including corporate responsibility for overall plant nuclear safety. This responsibility includes setting and implementing policies, objectives, and priorities to ensure activities are performed in accordance with QAP and other corporate requirements. The CNO is designated as the Company Officer responsible for assuring that defects and non-compliances are reported to the NRC as required by 10CFR21.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

1.1.5 Licensing Director – New Nuclear Projects

The Licensing Director – New Nuclear Projects reports to the Vice President – New Nuclear Projects and is responsible for the generation of the Combined Operating License (COL) application, and is responsible for the day-to-day oversight of the COL application contractor and assuring corrective action is taken for any quality concerns that are raised. This position is also responsible for the licensing actions associated with the New Nuclear Projects through the final licensing action associated with the new nuclear project.

1.1.6 Project Director – New Nuclear Projects

The Project Director – New Nuclear Projects, reports to the Vice President – New Nuclear Projects, is responsible for the construction and test of the new nuclear plant and is accountable for ensuring that company policy and procedures are properly implemented at the nuclear site.

1.1.7 Construction Director – New Nuclear Projects

The Construction Director reports to the Project Director – New Nuclear Projects, and is responsible to interface with the NSSS supplier, the selected A/E, and the constructor. This position is responsible for the day to day oversight of the construction effort as the new nuclear plant is constructed, and for assuring corrective action is robust for any construction quality concerns that are raised by the Contractor or by FPL personnel.

1.1.8 Engineering Site Director – New Nuclear Projects

The Engineering Site Director – Units 6 & 7 reports to the Project Director – New Nuclear Projects, and is responsible to interface with the NSSS supplier, and the selected A/E. This position is responsible for the day to day oversight of the engineering effort as the new nuclear plant is designed and constructed, and for assuring that corrective action is robust for any engineering issues that are raised by the Contractor or by FPL personnel.

1.1.9 Quality Assurance Project Manager– New Nuclear Projects

The New Nuclear Projects Quality Assurance Project Manager (QAPM) reports directly to the Director Nuclear Assurance, and is responsible for the development and verification of implementation of the QAPD described in this document. The QAPM is responsible for verifying compliance with regulatory requirements and procedures through audits and technical reviews; for monitoring organization processes to ensure conformance to commitments and licensing document requirements; for verifying that vendors who provide quality services, parts and materials to the new nuclear project are meeting the requirements of 10 CFR 50, Appendix B through NUPIC or FPL vendor audits. The QAPM has sufficient independence from other New Nuclear Projects priorities to bring forward issues affecting safety and quality and make judgments regarding quality in all areas necessary regarding FPL's nuclear development activities. The QAPM may make recommendations to the New Nuclear Projects management regarding improvement in the quality of work processes. If the QAPM disagrees with actions taken by the organization in this regard and is unable to obtain resolution, the QAPM shall inform the Director Nuclear Assurance.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

1.1.10 Plant General Manager – New Nuclear Projects

The Plant General Manager – New Nuclear Projects reports directly to the Site Vice President Units 6 & 7 and is responsible for plant operation and administratively to the Vice President New Nuclear Projects during construction. This position is responsible for development of the site operating and support staff, and for operation of the new nuclear plant during the test phase. During construction, the Plant General Manager coordinates activities with the Vice President New Nuclear Projects to provide for equipment operation, maintenance and test including ITACC.

In this position, as the plant moves into the operations phase, the Plant General Manager assures the safe, reliable, and efficient operation of the plant within the constraints of applicable regulatory requirements, combined operating license, and the QAP. Functional areas of responsibility also include chemistry activities, fuel handling (receipt, movement, and storage), health physics/radiological protection, operations and support, maintenance and production planning, and related procedures and programs.

1.1.11 Testing Director

The Testing Director reports to the Project Director – NNP, and is responsible to coordinate the test program for the new nuclear plant. This position is responsible to develop the test program and to support the contractors and the operating staff through the plant test and startup phase.

1.1.12 Vice President - Integrated Supply Chain

This position reports to the CEO through the Executive Vice President Engineering, Construction and Corporate Services and is responsible for procurement engineering; negotiating, generating, and issuing procurement documents for required items, coordinating contract activities and for services that support the operation, licensing, maintenance, modification, and inspection of FPL nuclear plants, as well as for materials and equipment to support the Nuclear Division staff. Responsibilities also include the review of procurement documents to ensure that technical and quality requirements are properly incorporated and for the performance of receipt inspection to verify that purchased items comply with procurement document requirements (other than at stations where receipt inspection is performed by the Quality Assurance Organization), and for the control of materials received at each FPL nuclear plant site in accordance with company policy and procedures.

1.1.13 Manager - Sourcing

This position reports to the Vice President Integrated Supply Chain with direct interface with the VP-NNP. The position has functional areas of responsibility that include the authority for day-to-day material support activities at the site. Activities include contract coordination, procurement document control, and receipt and control of material.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

1.1.14 Nuclear Steam Supply System (NSSS) Design Control Document (DCD) Holder |

The NSSS DCD Holder provides plant design and licensing of the plant on the FPL site. These engineering services for new nuclear generation include engineering and design necessary to support construction activities within the scope of the certified design.

1.1.15 A/E / Constructor |

The A/E Firm provides engineering services. These engineering services include site specific design activities necessary to support planning for preconstruction and construction of new nuclear generation. The Constructor provides construction services for the new plant.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

1.2 FPL Nuclear Fleet Corporate Operating Organization

In establishing its organizational structure, NextEra Energy commits to compliance with NQA-1, 1994, Basic Requirement 1 and Supplement 1S-1. Management gives careful consideration to the timing, extent and effects of organizational structure changes.

1.2.1 Corporate Organization

The following positions have the described corporate functional responsibilities. Some titles and reporting relationships may vary between corporate and some sites, but in all cases there is a designated position to carry out the defined responsibilities.

1.2.2 NextEra Energy President and Chief Executive Officer (CEO)

This position is responsible for overall corporate policy and provides executive direction and guidance for the corporation as well as promulgates corporate policy through the Company's senior management staff. Responsibility for developing, implementing, and verifying execution of the Quality Assurance Program is delegated to the Chief Operating Officer. Responsibility for implementing the Quality Assurance Program is delegated to the Chief Nuclear Officer and authority for developing and verifying execution of the program is delegated to the Director Nuclear Assurance.

1.2.3 Executive Vice President and Chief Nuclear Officer (CNO)

This position reports to the CEO and has overall responsibility for the implementation of the QAP and for the Nuclear Division's activities including corporate responsibility for overall plant nuclear safety. This responsibility includes setting and implementing policies, objectives, and priorities to ensure activities are performed in accordance with QAP and other corporate requirements. The CNO is designated as the Company Officer responsible for assuring that defects and non-compliances are reported to the NRC as required by 10CFR21.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

1.2.4 Vice President Nuclear Fleet Technical Support

This position reports to the CNO and has the Vice President CFAM and Outage Support, the Vice President Organizational Effectiveness and General Managers, as assigned in selected functional areas, reporting to this position. This position is responsible for corporate CFAMs, outage support, organizational effectiveness, fleet engineering, issue management and fleet projects. This position is also the functional interface with Nuclear Information Technology. The organizations that implement some of these responsibilities are assigned to the Site Vice President(s). Responsibilities include a functional interface with Nuclear Information Technology.

1.2.5 Vice President Organizational Effectiveness

This position reports to the CNO and is responsible for organizational support activities, including: fleet training, fleet licensing, performance improvement, emergency preparedness, which includes operating experience, document control, records management, security, and fleet standardization.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

1.2.6 Vice President CFAM and Outage Support

The Vice President CFAM and Outage Support reports to the Vice President Nuclear Fleet Technical Support and is responsible for corporate CFAM activities, including maintenance, operations, work management, safety and chemistry/radiation protection. In addition, responsibilities include outage planning and execution. Some responsibilities may be implemented through a General Manager reporting to this position.

1.2.7 Vice President Organizational Effectiveness

The Vice President Organizational Effectiveness reports to the Vice President Nuclear Fleet Technical Support and is responsible for fleet training, licensing, security, emergency preparedness, and performance improvement / standardization, which includes operating experience, document control and records management. Some responsibilities may be implemented through a General Manager reporting to this position.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

1.2.8 General Managers

General Managers are assigned to the areas of Operations (including operations; emergency preparedness; and chemistry), Fleet Engineering (including design engineering; probabilistic safety analysis; and nuclear fuel), Issue Management (including engineering programs and the engineering chief's organization), and Fleet Projects (including capital projects; project engineering; project control; project implementation; and ISFSI) and General Managers report to the Vice President Nuclear Fleet Technical Support directly, or through another responsible vice president.

1.2.9 Corporate Functional Area Managers (CFAM)

The CFAMs are responsible to institutionalize the governance and oversight principles implemented by the CFAM program. The CFAM is the highest level of authority within a functional area and are implemented for all functional areas identified in the Nuclear Excellence Model. CFAMs employ functional area processes as a means of achieving fleet-wide alignment, teamwork, efficiency, promote achieving, and maintaining the FPL nuclear operational excellence. CFAMs are established in the following functional areas: maintenance, radiation protection, work management, safety & human performance, and operations/emergency planning/chemistry.

1.2.10 Vice President Integrated Supply Chain

This position reports to the CEO through the Executive Vice President Engineering, Construction and Corporate Services and is responsible for procurement engineering; coordinating contract activities; negotiating, generating, and issuing procurement documents for required items and services supporting the operation, licensing, maintenance, modification, and inspection at the nuclear plants, and for materials and equipment to support the Nuclear Division staff. Responsibilities also include the review of procurement documents to assure that technical and quality requirements are incorporated into the procurement documents that it authorizes, performance of receipt inspection to verify that purchased items comply with procurement document requirements (except at stations where receipt inspection is performed by the Nuclear Oversight Organization), and controlling materials received at each nuclear plant site in accordance with company policy and procedures.

1.2.11 Director Nuclear Assurance

This position reports to the CNO and is responsible for activities that include establishing, maintaining, and interpreting quality assurance practices and policies (including this QATR); managing independent assessment (Quality Assurance {QA}) and establishing quality control practices and policies for quality verification activities. The Director Nuclear Assurance has direct access to the Chief Nuclear Officer for resolution of any areas in question.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

Additional responsibilities include facilitating actions deemed necessary to prevent unsafe plant conditions or a significant violation of the QAP; periodically apprising the CNO of the status of the quality assurance program at NextEra Energy facilities and immediately apprising senior management of significant problems affecting quality; and verifying implementation of solutions for significant conditions adverse to quality identified by Nuclear Oversight. Also responsible for establishing the requirements for assessor and inspector certification; and providing for supplier evaluation; the conduct of supplier assessments or surveys; and verification that supplier quality assurance programs comply with NextEra Energy requirements. This position has Stop Work authority at the sites and corporate offices.

1.2.12 Director Nuclear Fleet Security

This position reports to the Vice President Organization Effectiveness and is responsible for Nuclear Fleet Security and Fleet Access Authorization (AA)/Fitness for Duty (FFD) programs. This includes direct authority/responsibility for all Site Security/AA/FFD functions.

1.2.13 Vice President and Chief Information Officer

This position reports to the CEO through the Vice Chairman & CFO Nextera Energy. The CIO is responsible for nuclear information management such as computer-related hardware and software acquisition, deployment, maintenance, control and replacement; telecommunications; information / cyber security; and applicable training.

1.2.14 Director of IT Business Solutions and IM Nuclear Systems

This position reports to the Vice President & Chief Information Officer with direct interface with the Vice President Nuclear Fleet Technical Support. The position has functional areas of responsibility that include management of information technology, nuclear cyber security, and computer-related hardware/software acquisition. The functions are supported via staff at both corporate and site levels.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

1.3 FPL Nuclear Fleet Site Organization

1.3.1 Site Organization

The following site management positions describe the typical site QAP functional responsibilities, which may be delegated to others as established in this document. The on-site operating organization includes one or more individuals knowledgeable in the following fields: nuclear power plant operation; nuclear power plant mechanical, electrical, and electronic systems; nuclear engineering; chemistry and radiochemistry; radiation protection; and quality assurance. Some functions, such as operating experience, document control, or records management, may be aligned under different groups at different sites. Site procedures provide detailed organizational descriptions.

1.3.2 Site Vice President (SVP)

This position reports to the CNO and is responsible for the operation, maintenance, licensing, training, emergency planning, and modification of the plant. In this position, the SVP acts as a liaison between the plants and corporate and is accountable for ensuring that the company policy and procedures are properly implemented and continued at the nuclear site.

1.3.3 Plant General Manager

This position reports to the Site Vice President and is responsible for the safe operation of the nuclear plant. The Plant General Manager has control of the onsite resources necessary for the safe operation and maintenance regardless of organizational reporting.

In this position, the Plant General Manager assures the safe, reliable, and efficient operation of the plant within the constraints of applicable regulatory requirements, operating license, and the QAP. Functional areas of responsibility also include chemistry activities, environmental services, fuel handling (receipt, movement, and storage), health physics/radiological protection, operations and support, maintenance and production planning, and related procedures and programs. The Onsite Review Group serves the Plant General Manager in a technical capacity and provides review of plant safety and performance (see Appendix A).

1.3.4 Licensing Manager

This position reports to the SVP and is responsible for site regulatory interfaces and licensing actions.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

1.3.5 Performance Improvement Manager

This position reports to either the Site Vice President or the Plant General Manager and is responsible for administration of the corrective action and self-assessment programs.

This position is also responsible for NUREG-0737, Action Plan Item I.B.1.2 technical review functions that St. Lucie Unit 2 and Seabrook Station are committed to regarding the oversight, implementation, and coordination of internal and external operating experience.

1.3.6 Engineering Site Director

This position reports functionally to the Site Vice President and interfaces with the General Manager Fleet Engineering for governance and oversight. The position has functional areas of responsibility that include authority for day-to-day engineering support activities, design engineering, engineering document control, engineering administration, modifications and their implementation, plant design configuration control, reactor engineering, system engineering, system testing, and technical support.

This position is also responsible for NUREG-0737, Action Plan Item I.B.1.2 technical review functions that St. Lucie Unit 2 and Seabrook Station are committed to and implement by system health monitoring, development of a quarterly system health report which provides system performance and status to senior management, and development and implementation of the Maintenance Rule Program.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

1.3.7 Training Site Manager

This position reports to the Site Vice President and functionally interfaces with the Director of Training (offsite) and is responsible for training. The Site Training Manager provides direction, control, and overall supervision of training personnel and training for all site personnel as required. Functional areas of responsibility include training support services, technical training, and operations training.

1.3.8 Emergency Preparedness Manager

This position reports to the Site Vice President and functionally interfaces with the Director of Emergency Preparedness (offsite) and is responsible for maintaining and implementing the emergency plan for the station.

1.3.9 Qualifications of Technical Support Personnel

The qualifications of managers and supervisors of the technical support organization meet the qualification requirements in education and experience for those described in ANSI/ANS-3.1-1993 (Reference 201) as endorsed and amended by RG 1.8. The qualification and experience requirements of headquarters staff are established in accordance with current corporate nuclear policy and procedure manuals.

The following positions report directly offsite, but functionally reports to a site position:

1.3.10 Project Site Manager

This position reports to the Vice President Nuclear Engineering Support (offsite) with direct interface with the Site Vice President and is responsible for installing plant modifications as a result of design changes and implementing other major projects.

1.3.11 Nuclear Oversight Manager

This position reports to the Director Nuclear Assurance (offsite) and is responsible for site quality activities. Significant safety or quality issues requiring escalated action are directed through this position to senior management, as necessary. Functional responsibilities include conducting independent assessments of line and support activities; monitoring and assessing day-to-day station activities; stop work authority at the site; periodic reporting on the status and adequacy of the quality program; and providing quality verification and inspections.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

1.3.12 Manager Materials Management

This position reports to the Vice President Integrated Supply Chain (offsite) with direct interface with the Site Vice President. The position has functional areas of responsibility that include authority for day-to-day material support activities at the site. Activities include contract coordination, procurement document control, and receipt and control of material.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

1.4 Authority

1.4.1 Authority to Stop Work

Quality assurance and inspection personnel have the authority, and the responsibility, to stop work in progress which is not being done in accordance with approved procedures or where safety or SSC integrity may be jeopardized. This extends to off-site work performed by suppliers that furnish safety-related materials and services to FPL.

1.4.2 Quality Assurance Organizational Independence

For construction, independence shall be maintained between the organization or organizations performing the checking (quality assurance and control) functions and the organizations performing the functions. This provision is not applicable to design review/verification.

1.4.3 NQA-1-1994 Commitment

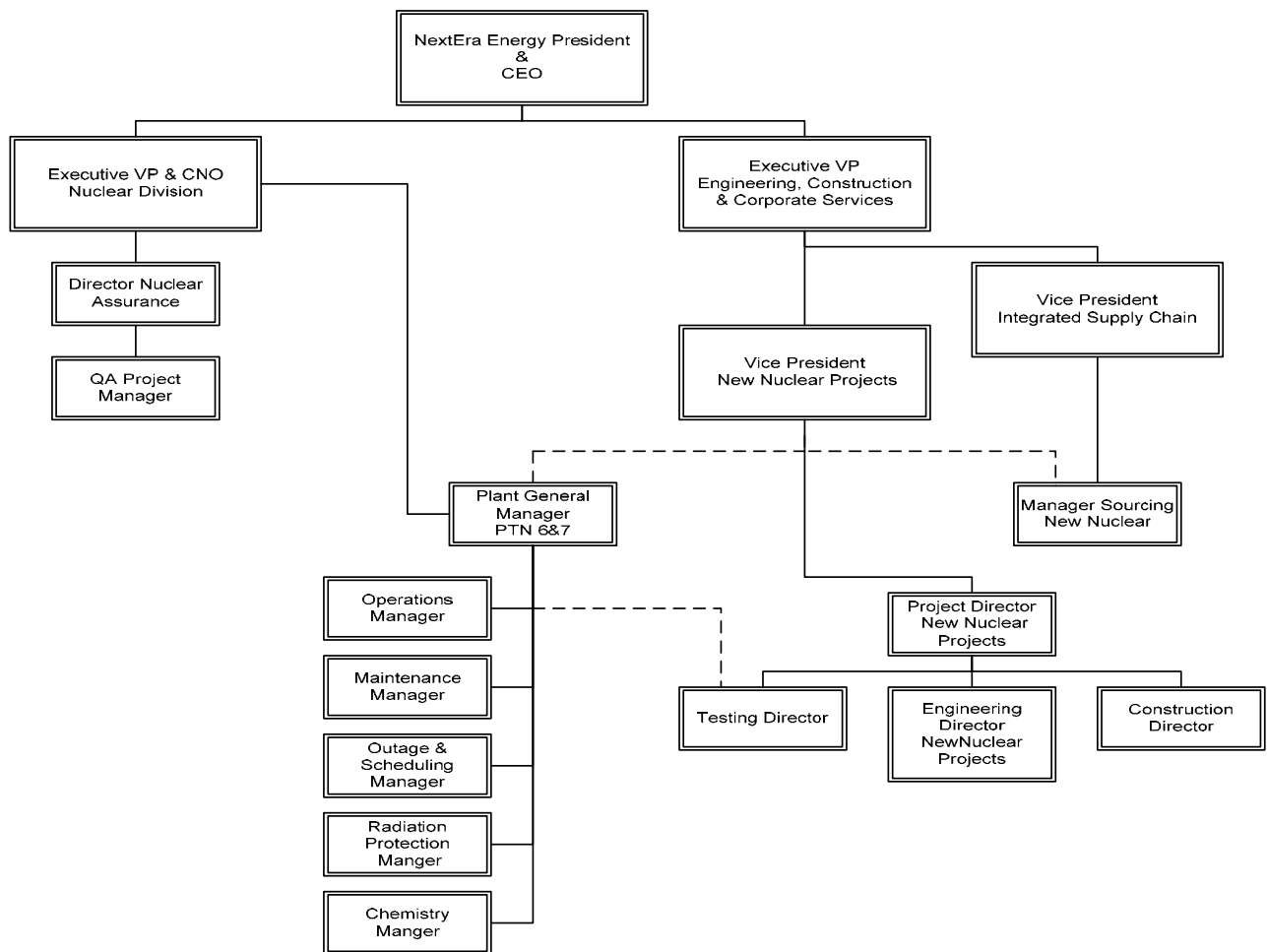
In establishing its organizational structure, FPL commits to compliance with NQA-1-1994, Basic Requirement 1 and Supplement 1S-1.

Quality Assurance Program Description

SECTION I ORGANIZATION (CONTINUED)

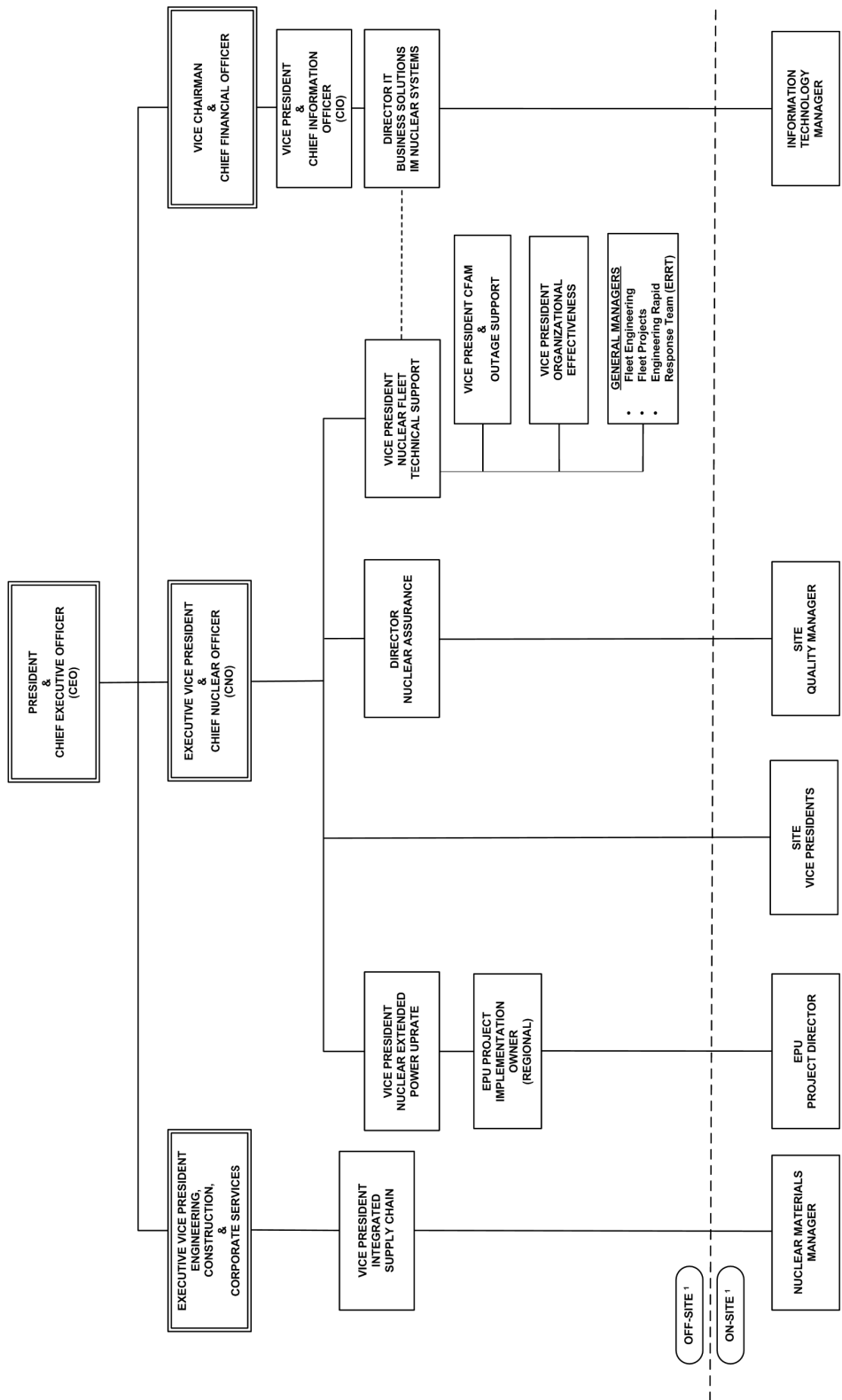
Figure 1-1: NPP Construction and Startup Organization

NPP CONSTRUCTION AND STARTUP ORGANIZATION



SECTION I ORGANIZATION (CONTINUED)
Figure 1-2: FPL Nuclear Fleet Corporate Operating Organization

ORGANIZATION RELATIONSHIPS OF KEY MANAGEMENT & FUNCTIONAL GROUPS
(CORPORATE)
Revision 8

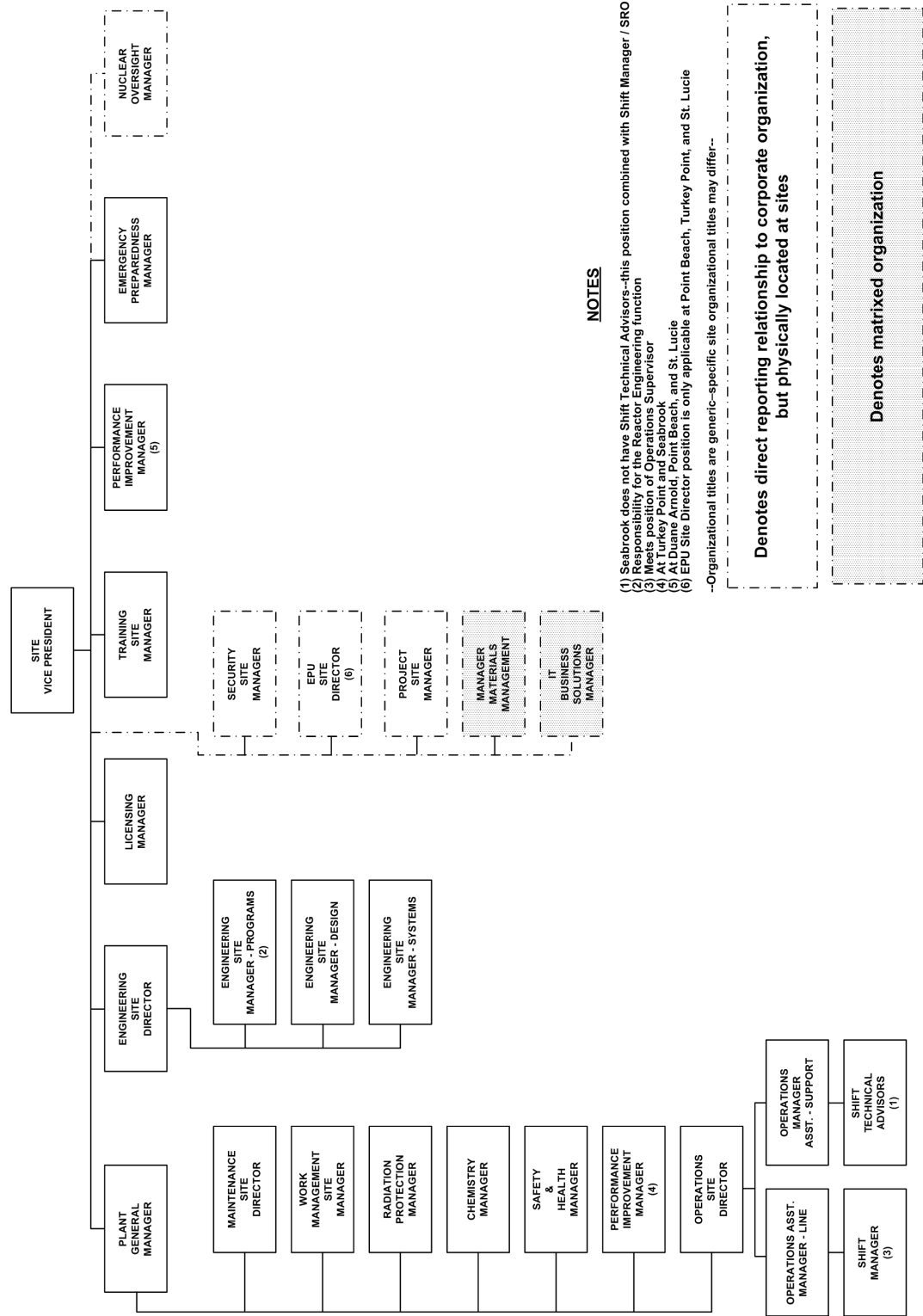


NOTES

1. The on-site management positions may report directly to the off-site executives as shown or to a management position within the off-site executive's organization.

SECTION I ORGANIZATION (CONTINUED)
Figure 1-3 FPL Nuclear Fleet Site Organization

ORGANIZATION RELATIONSHIPS OF KEY MANAGEMENT & FUNCTIONAL GROUPS
(SITE)
Revision 5



Quality Assurance Program Description

SECTION 2 QUALITY ASSURANCE PROGRAM

FPL has established the necessary measures and governing procedures to implement the QAP as described in the QAPD. FPL is committed to implementing the QAP for all aspects of work that are important to the safety of the nuclear plants as described and to the extent delineated in the QAPD. Further, FPL ensures through the systematic process described herein that its suppliers of safety-related equipment or services meet the applicable requirements of 10 CFR 50, Appendix B. Senior management is regularly apprised of the adequacy of implementation of the QAPD through the audit functions described in Part II, Section 18.

The objective of the QAPD is to assure that FPL's nuclear generating plants are designed, constructed, and operated in accordance with governing regulations and license requirements. The program is based on the requirements of ASME NQA-1-1994, "Quality Assurance Requirements for Nuclear Facility Applications," as further described in this document. The QAPD applies to those quality-related activities that involve the functions of safety-related structures, systems, and components (SSCs) associated with the design (excluding Design Certification activities), fabrication, construction, and testing of the SSCs of the facility and to the managerial and administrative controls to be used to assure safe operations. A list or system that identifies SSCs and activities to which this program applies is maintained at the appropriate facility. The Design Certification Document is used as the basis for this list. Cost and scheduling functions do not prevent proper implementation of the QAPD.

As described in Part III of the QAPD, specific program controls are applied to nonsafety-related SSCs, for which 10 CFR 50, Appendix B, is not applicable, that are significant contributors to plant safety. The specific program controls consistent with applicable sections of the QAPD are applied to those items in a selected manner, targeted at those characteristics or critical attributes that render the SSC a significant contributor to plant safety.

Delegated responsibilities may be performed under a supplier's or principal contractor's QAPD, provided that the supplier or principal contractor has been approved as a supplier in accordance with the QAPD. Periodic audits and assessments of supplier QA programs are performed to assure compliance with the supplier's or principal contractor's QAPD and implementing procedures. In addition, routine interfaces with supplier personnel provide added assurance that quality expectations are met.

New nuclear plant construction will be the responsibility of FPL's NNP organization. Detailed engineering specifications and construction procedures will be developed to implement the QAPD and NSSS QA programs prior to commencement of construction activities.

In general, the program requirements specified herein are detailed in implementing procedures that are either FPL implementing procedures, or supplier implementing procedures governed by a supplier quality assurance program.

Quality Assurance Program Description

SECTION 2 QUALITY ASSURANCE PROGRAM (CONTINUED)

A grace period of 90 days may be applied to provisions that are required to be performed on a periodic basis, unless otherwise noted. Annual evaluations and audits that must be performed on a triennial basis are examples where the 90 day general period could be applied. The grace period does not allow the "clock" for a particular activity to be reset forward. The "clock" for an activity is reset backwards by performing the activity early. Audits schedules are based on the month in which the audit starts.

2.1 Responsibilities

Personnel who work directly or indirectly for FPL are responsible for achieving acceptable quality in the work covered by the QAPD. This includes the activities delineated in Part I, Section 1.1. FPL personnel performing verification activities are responsible for verifying the achievement of acceptable quality. Activities governed by the QAPD are performed as directed by documented instructions, procedures, and drawings that are of a detail appropriate for the activity's complexity and effect on safety. Instructions, procedures and drawings specify quantitative or qualitative acceptance criteria as applicable or appropriate for the activity. Verification is performed against these criteria. Provisions are established to designate or identify the proper documents to be used for an activity, and to ascertain that such documents are being used. The Quality Assurance Project Manager is responsible for verification that processes and procedures comply with QAPD and other applicable requirements, that such processes or procedures are implemented, and that management appropriately ensures compliance.

2.2 Delegation of Work

FPL retains and exercises the responsibility for the scope and implementation of an effective QAP. Positions identified in Part II, Section 1, of this QAPD may delegate all or part of the activities of planning, establishing, and implementing the program for which they are responsible to others, but retain the responsibility for the program's effectiveness. Decisions affecting safety are made at the level appropriate for their nature and effect, and with any necessary technical advice or review.

2.3 Site-specific Safety-Related Design Basis Activities

Site-specific safety-related design basis activities are defined as those activities, including sampling, testing, data collection, and supporting engineering calculations and reports, that will be used to determine the bounding physical parameters of the site. Appropriate quality assurance measures are applied.

Quality Assurance Program Description

SECTION 2 QUALITY ASSURANCE PROGRAM (CONTINUED)

2.4 Periodic Review of the Quality Assurance Program

Management of those organizations implementing the QA program, or portions thereof, assesses the adequacy of that part of the program for which it are responsible to ensure effective implementation at least once each year or at least once during the life of the activity, whichever is shorter. However, the required periodicity for the assessment of QA programs during the operations phase may be extended to once every two years.

2.5 Issuance and Revision to Quality Assurance Program

Administrative control of the QAPD will be in accordance with 10 CFR 50.55(f) and 10 CFR 50.54(a). Changes to the QAPD are evaluated by the Quality Assurance Project Manager to ensure that such changes do not degrade previously approved quality assurance controls specified in the QAPD. This document shall be revised as appropriate to incorporate additional QA commitments that may be established during the Combined Operating License (COL) application development process. Revisions to the document will be reviewed, at a minimum, by the FPL Director Nuclear Assurance and approved by the Vice President – New Nuclear Projects.

Regulations require that the Final Safety Analysis Report (FSAR) include, among other things, the managerial and administrative controls to be used to assure safe operation, including a discussion of how the applicable requirements of Appendix B will be satisfied. In order to comply with this requirement, the FSAR references the QAPD and, as a result, the requirements of 10 CFR 50.54(a) are satisfied by and apply to the QAPD.

2.6 Personnel Qualifications

Personnel assigned to implement elements of the QAPD shall be capable of performing their assigned tasks. To this end, FPL establishes and maintains formal indoctrination and training programs for personnel performing, verifying, or managing activities within the scope of the QAPD to assure that suitable proficiency is achieved and maintained. Plant and support staff minimum qualification requirements are as delineated in the unit Technical Specifications. Other qualification requirements may be established but will not reduce those required by Technical Specifications. Sufficient managerial depth is provided to cover absences of incumbents. When required by code, regulation, or standard, specific qualification and selection of personnel is conducted in accordance with those requirements as established in applicable FPL procedures. Indoctrination includes the administrative and technical objectives, requirements of the applicable codes and standards, and the QAPD elements to be employed. Training for positions identified in 10 CFR 50.120 is accomplished according to programs accredited by the National Nuclear Accrediting Board of the National Academy of Nuclear Training that implement a systematic approach to training. Records of personnel training and qualification are maintained.

Quality Assurance Program Description

SECTION 2 QUALITY ASSURANCE PROGRAM (CONTINUED)

The minimum qualifications of the Director – Nuclear Assurance and the New Nuclear Projects Quality Assurance Project Manager are that each holds an engineering or related science degree and a minimum of four years of related experience including two years of nuclear power plant experience, one year of supervisory or management experience, which one year of the experience is in performing quality verification activities. Special requirements shall include management and supervisory skills and experience or training in leadership, interpersonal communication, management responsibilities, motivation of personnel, problem analysis and decision making, and administrative policies and procedures. Individuals who do not possess these formal education and minimum experience requirements should not be eliminated automatically when other factors provide sufficient demonstration of their abilities. These other factors are evaluated on a case-by-case basis and approved and documented by senior management.

The minimum qualifications of the individuals responsible for planning, implementing, and maintaining the programs for the QAPD are that each has a high school diploma or equivalent and has a minimum of one year of related experience. Individuals who do not possess these formal education and minimum experience requirements should not be eliminated automatically when other factors provide sufficient demonstration of their abilities. These other factors are evaluated on a case-by-case basis and approved and documented by senior management.

2.7 NQA-1-1994 Commitment / Exceptions

In establishing qualification and training programs, FPL commits to compliance with NQA-1-1994, Basic Requirement 2 and Supplements 2S-1, 2S-2, 2S-3 and 2S-4, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 2S-1
 - Supplement 2S-1 will include use of the guidance provided in Appendix 2A-1 in the same manner as if it were part of the Supplement. The following two alternatives may be applied to the implementation of this Supplement and Appendix:
 - (1) In lieu of being certified as Level I, II, or III in accordance with NQA-1-1994, personnel that perform independent quality verification inspections, examinations, measurements, or tests of material, products, or activities may possess qualifications equal to or better than those required for performing the task being verified provided that the verification is within the skills of these personnel and/or is addressed by procedures. These individuals will not be responsible for the planning of quality verification inspections and tests (i.e., establishing hold points and acceptance criteria in procedures, and determining who will be responsible for performing the inspections), evaluating inspection training programs, nor certifying inspection personnel.

Quality Assurance Program Description

SECTION 2 QUALITY ASSURANCE PROGRAM (CONTINUED)

- (2) A qualified engineer may be used to plan inspections, evaluate the capabilities of an inspector, or evaluate the training program for inspectors. For the purpose of these functions, a qualified engineer is one who has a baccalaureate in engineering in a discipline related to the inspection activity (such as electrical, mechanical, civil) and has a minimum of five years engineering work experience with at least two years of this experience related to nuclear facilities.
- NQA-1-1994, Supplement 2S-2
 - In lieu of Supplement 2S-2, for qualification of nondestructive examination personnel, FPL will follow the applicable standard cited in the version(s) of Section III and Section XI of the ASME Boiler and Pressure Vessel Code approved by the NRC for use at FPL sites.
- NQA-1-1994, Supplement 2S-3
 - The requirement that prospective Lead Auditors have participated in a minimum of five (5) audits in the previous three (3) years is replaced by the following, "The prospective lead auditor shall demonstrate his/her ability to properly implement the audit process, as implemented by FPL, to effectively lead an audit team, and to effectively organize and report results, including participation in at least one nuclear audit within the year preceding the date of qualification."

Quality Assurance Program Description

SECTION 3 DESIGN CONTROL

FPL has established and implements a process to control the design, design changes, and temporary modifications (e.g., temporary bypass lines, electrical jumpers and lifted wires, and temporary setpoints) for items that are subject to the provisions of the QAPD. The design process includes provisions to control design inputs, outputs, changes, interfaces, records, and organizational interfaces within FPL and with suppliers. These provisions assure that design inputs (such as design bases and the performance, regulatory, quality, and quality verification requirements) are correctly translated into design outputs (such as analyses, specifications, drawings, procedures, and instructions) so that the final design output can be related to the design input in sufficient detail to permit verification. Design change processes and the division of responsibilities for design-related activities are detailed in FPL and supplier procedures. The design control program includes interface controls necessary to control the development, verification, approval, release, status, distribution, and revision of design inputs and outputs. Design changes and disposition of nonconforming items as "use as is" or "repair" are reviewed and approved by the FPL design organization or by other organizations so authorized by FPL.

Design documents are reviewed by individuals knowledgeable in QA to ensure the documents contain the necessary QA requirements.

3.1 Design Verification

FPL design processes provide for design verification to ensure that items and activities subject to the provisions of the QAPD are suitable for their intended application, consistent with their effect on safety. Design changes are subjected to these controls, which include verification measures commensurate with those applied to original plant design.

Design verifications are performed by competent individuals or groups other than those who performed the original design but who may be from the same organization. The verifier shall not have taken part in the selection of design inputs, the selection of design considerations, or the selection of a singular design approach, as applicable. This verification may be performed by the originator's supervisor provided the supervisor did not specify a singular design approach, rule out certain design considerations, and did not establish the design inputs used in the design, or if the supervisor is the only individual in the organization competent to perform the verification. If the verification is performed by the originator's supervisor, the justification of the need is documented and approved in advance by management.

The extent of the design verification required is a function of the importance to safety of the item under consideration, the complexity of the design, the degree of standardization, the state-of-the-art, and the similarity with previously proven designs. This includes design inputs, design outputs, and design changes. Design verification procedures are established and implemented to assure that an appropriate verification method is used, the appropriate design parameters to be verified are chosen, the acceptance criteria are identified, and the verification is satisfactorily accomplished and documented. Verification methods may include, but are not limited to, design reviews, alternative calculations and qualification testing. Testing used to verify the acceptability of a specific design feature demonstrates acceptable performance under conditions that simulate the most adverse design conditions expected for item's intended use.

Quality Assurance Program Description

SECTION 3 DESIGN CONTROL (CONTINUED)

FPL normally completes design verification activities before the design outputs are used by other organizations for design work, and before they are used to support other activities such as procurement, manufacture, or construction. When such timing cannot be achieved, the design verification is completed before relying on the item to perform its intended design or safety function.

3.2 Design Records

FPL maintains records sufficient to provide evidence that the design was properly accomplished. These records include the final design output and any revisions thereto, as well as record of the important design steps (e.g., calculations, analyses and computer programs) and the sources of input that support the final output.

Plant design drawings reflect the properly reviewed and approved configuration of the plant.

3.3 Computer Application and Digital Equipment Software

The QAPD governs the development, procurement, testing, maintenance, and use of computer applications and digital equipment software when used in safety-related applications and designated nonsafety-related applications. FPL and suppliers are responsible for developing, approving, and issuing procedures, as necessary, to control the use of such computer applications and digital equipment software. The procedures require that the application software be assigned a proper quality classification and that the associated quality requirements be consistent with this classification. Each software application and revision thereto is documented and approved by authorized personnel. The QAPD is also applicable to the administrative functions associated with the maintenance and security of computer hardware where such functions are considered essential in order to comply with other QAPD requirements such as QA records.

3.4 Setpoint Control

Instrument and equipment setpoints that could affect nuclear safety shall be controlled in accordance with written instructions. As a minimum, these written instructions shall:

1. Identify responsibilities and processes for reviewing, approving, and revising setpoints and setpoint changes originally supplied by the NSSS supplier, the A/E, and the plant's technical staff. |
2. Ensure that setpoints and setpoint changes are consistent with design and accident analysis requirements and assumptions. |
3. Provide for documentation of setpoints, including those determined operationally. |
4. Provide for access to necessary setpoint information by personnel who write or revise plant procedures, operate or maintain plant equipment, develop or revise design documents, or develop or revise accident analyses. |

Quality Assurance Program Description

SECTION 3 DESIGN CONTROL (CONTINUED)

3.5 NQA-1-1994 Commitment

In establishing its program for design control and verification, FPL commits to compliance with NQA-1-1994, Basic Requirement 3, and Supplement 3S-1, the subsurface investigation requirements in Subpart 2.20, and the standards for computer software in Subpart 2.7.

Quality Assurance Program Description

SECTION 4 PROCUREMENT DOCUMENT CONTROL

FPL has established the necessary measures and governing procedures to assure that purchased items and services are subject to appropriate quality and technical requirements. Procurement document changes shall be subject to the same degree of control as utilized in the preparation of the original documents. These controls include provisions such that:

- Where original technical or quality assurance requirements cannot be determined, an engineering evaluation is performed and documented by qualified staff to establish appropriate requirements and controls to assure that interfaces, interchangeability, safety, fit and function, as applicable, are not adversely affected and are not contrary to applicable regulatory requirements.
- Applicable technical, regulatory, administrative, quality and reporting requirements (such as specifications, codes, standards, tests, inspections, special processes, and 10 CFR 21) are invoked for procurement of items and services. 10 CFR 21 requirements concerning posting, evaluating, and reporting will be followed and imposed on suppliers when applicable. Applicable design bases and other requirements necessary to assure adequate quality shall be included or referenced in documents for procurement of items and services. To the extent necessary, procurement documents shall require that suppliers have a documented QA program that is determined to meet the applicable requirements of 10 CFR 50, Appendix B, as appropriate to the circumstances of procurements (or the supplier may work under FPL's approved QA program).

Reviews of procurement documents shall be performed by personnel who have access to pertinent information and who have an adequate understanding of the requirements and intent of the procurement documents.

4.1 NQA-1-1994 Commitment / Exceptions

In establishing controls for procurement, FPL commits to compliance with NQA-1-1994, Basic Requirement 4 and Supplement 4S-1, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 4S-1
 - Section 2.3 of this Supplement 4S-1 includes a requirement that procurement documents require suppliers to have a documented QAP that implements NQA-1-1994, Part 1. In lieu of this requirement, FPL may require suppliers to have a documented supplier QAP that is determined to meet the applicable requirements of 10 CFR 50, Appendix B, as appropriate to the circumstances of the procurement.
 - With regard to service performed by a supplier, FPL procurement documents may allow the supplier to work under the FPL QAP, including implementing procedures, in lieu of the supplier having its own QAP.

Quality Assurance Program Description

SECTION 4 PROCUREMENT DOCUMENT CONTROL (CONTINUED)

- Section 3 of supplement 4S-1 requires procurement documents to be reviewed prior to bid or award of contract. The quality assurance review of procurement documents is satisfied through review of the applicable procurement specification, including the technical and quality procurement requirements, prior to bid or award of contract. Procurement document changes (e.g., scope, technical, or quality requirements) will also receive the quality assurance review.
- Procurement documents for Commercial Grade Items that will be procured by FPL for use as safety-related items shall contain technical and quality requirements such that the procured item can be appropriately dedicated.

Quality Assurance Program Description

SECTION 5 INSTRUCTIONS, PROCEDURES, AND DRAWINGS

FPL has established the necessary measures and governing procedures to ensure that activities affecting quality are prescribed by and performed in accordance with instructions, procedures or drawings of a type appropriate to the circumstances and which, where applicable, include quantitative or qualitative acceptance criteria to implement the QAPD. Such documents are prepared and controlled according to Part II, Section 6. In addition, means are provided to disseminate to the staff instructions of both general and continuing applicability, as well as those of short-term applicability. Provisions are included for reviewing, updating, and canceling such procedures.

5.1 Procedure Adherence

FPL's policy is that procedures are followed, and the requirements for use of procedures have been established in administrative procedures. Where procedures cannot be followed as written, provisions are established for making changes in accordance with Part II, Section 6. Requirements are established to identify the manner in which procedures are to be implemented, including identification of those tasks that require: (1) the written procedure to be present and followed step-by-step while the task is being performed, (2) the user to have committed the procedure steps to memory, (3) verification of completion of significant steps, by initials or signatures or use of check-off lists. Procedures that are required to be present and referred to directly are those developed for extensive or complex jobs where reliance on memory cannot be trusted, tasks that are infrequently performed, and tasks where steps must be performed in a specified sequence.

In cases of emergency, personnel are authorized to depart from approved procedures when necessary to prevent injury to personnel or damage to the plant. Such departures are recorded describing the prevailing conditions and reasons for the action taken.

5.2 Procedure Content

The established measures address the applicable content of procedures as described in the introduction to Part II of NQA-1-1994. In addition, procedures governing tests, inspections, operational activities, and maintenance will include as applicable, initial conditions and prerequisites for the performance of the activity.

5.3 NQA-1-1994 Commitment

In establishing procedural controls, FPL commits to compliance with NQA-1-1994, Basic Requirement 5.

Quality Assurance Program Description

SECTION 6 DOCUMENT CONTROL

FPL has established the necessary measures and governing procedures to control the preparation of, issuance of, and changes to documents that specify quality requirements or prescribe how activities affecting quality, including organizational interfaces, are controlled to assure that correct documents are being employed. The control systems (including electronic systems used to make documents available) are documented and provide for the following:

- (a) identification of documents to be controlled and their specified distribution;
- (b) a method to identify the correct document (including revision) to be used and control of superseded documents;
- (c) identification of assignment of responsibility for preparing, reviewing, approving, and issuing documents;
- (d) review of documents for adequacy, completeness, and correctness prior to approval and issuance;
- (e) a method for providing feedback from users to continually improve procedures and work instructions; and
- (f) coordinating and controlling interface documents and procedures.

The types of documents to be controlled include:

- (a) drawings such as design, construction, installation, and as-built drawings;
- (b) engineering calculations;
- (c) design specifications;
- (d) purchase orders and related documents;
- (e) vendor-supplied documents;
- (f) audit, surveillance, and quality verification/inspection procedures;
- (g) inspection and test reports;
- (h) instructions and procedures for activities covered by the QAPD including design, construction, installation, operating (including normal and emergency operations), maintenance, calibration, and routine testing;
- (i) technical specifications; and
- (j) nonconformance reports and corrective action reports.

During the operational phase, where temporary procedures are used, they shall include a designation of the period of time during which it is acceptable to use them.

Quality Assurance Program Description

SECTION 6 DOCUMENT CONTROL (CONTINUED)

6.1 Review and Approval of Documents

Documents are reviewed for adequacy by qualified persons other than the preparer. During the construction phase, procedures for design, construction, and installation are also reviewed by the organization responsible for quality verification to ensure quality assurance measures have been appropriately applied. The documented review signifies concurrence.

During the operations phase, documents affecting the configuration or operation of the station as described in the SAR are screened to identify those that require review by the IRC prior to implementation as described in Part V, Section 2.2.

To ensure effective and accurate procedures during the operational phase, applicable procedures are reviewed, and updated as necessary, based on the following conditions:

- (a) following any modification to a system;
- (b) following an unusual incident, such as an accident, significant operator error, or equipment malfunction;
- (c) when procedure discrepancies are found;
- (d) prior to use if not used in the previous two years; or
- (e) results of QA audits conducted in accordance with Part II, Section 18.1.

Prior to issuance or use, documents including revisions thereto, are approved by the designated authority. A listing of all controlled documents identifying the current approved revision, or date, is maintained so personnel can readily determine the appropriate document for use.

6.2 Changes to Documents

Changes to documents, other than those defined in implementing procedures as minor changes, are reviewed and approved by the same organizations that performed the original review and approval unless other organizations are specifically designated. The reviewing organization has access to pertinent background data or information upon which to base their approval. Where temporary procedure changes are necessary during the operations phase, changes that clearly do not change the intent of the approved procedure may be implemented provided they are approved by two members of the staff knowledgeable in the areas affected by the procedures. Minor changes to documents, such as inconsequential editorial corrections, do not require that the revised documents receive the same review and approval as the original documents. To avoid a possible omission of a required review, the type of minor changes that do not require such a review and approval and the persons who can authorize such a classification shall be clearly delineated in implementing procedures.

6.3 NQA-1-1994 Commitment

In establishing provisions for document control, FPL commits to compliance with NQA-1-1994, Basic Requirement 6 and Supplement 6S-1.

Quality Assurance Program Description

SECTION 7 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES

FPL has established the necessary measures and governing procedures to control the procurement of items and services to assure conformance with specified requirements. Such control provides for the following as appropriate: source evaluation and selection, evaluation of objective evidence of quality furnished by the supplier, source inspection, audit, and examination of items or services.

7.1 Acceptance of Item or Service

FPL establishes and implements measures to assess the quality of purchased items and services, whether purchased directly or through contractors, at intervals and to a depth consistent with the item's or service's importance to safety, complexity, quantity, and the frequency of procurement. Verification actions include testing, as appropriate, during design, fabrication and construction activities. Verifications occur at the appropriate phases of the procurement process, including, as necessary, verification of activities of suppliers below the first tier.

Measures to assure the quality of purchased items and services include the following, as applicable:

- Items are inspected, identified, and stored to protect against damage, deterioration, or misuse.
- Prospective suppliers of safety-related items and services are evaluated to assure that only qualified suppliers are used. Qualified suppliers are audited on a triennial basis. In addition, if a subsequent contract or a contract modification significantly enlarges the scope of, or changes the methods or controls for, activities performed by the same supplier, an audit of the modified requirements is conducted, thus starting a new triennial period. FPL may utilize audits conducted by outside organizations for supplier qualification provided that the scope and adequacy of the audits meet FPL requirements. Documented annual evaluations are performed for qualified suppliers to assure they continue to provide acceptable products and services. Industry programs, such as those applied by ASME, Nuclear Procurement Issues Committee (NUPIC), or other established utility groups, are used as input or the basis for supplier qualification whenever appropriate. The results of the reviews are promptly considered for effect on a supplier's continued qualification and adjustments made as necessary (including corrective actions, adjustments of supplier audit plans, and input to third party auditing entities, as warranted). In addition, results are reviewed periodically to determine if, as a whole, they constitute a significant condition adverse to quality requiring additional action.

Quality Assurance Program Description

SECTION 7 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES (CONTINUED)

- Provisions are made for accepting purchased items and services, such as source verification, receipt inspection, pre- and post-installation tests, certificates of conformance, and document reviews (including Certified Material Test Report/Certificate). Acceptance actions/documents should be established by the Purchaser with appropriate input from the Supplier and be completed to ensure that procurement, inspection, and test requirements, as applicable, have been satisfied before relying on the item to perform its intended safety function.
- Controls are imposed for the selection, determination of suitability for intended use (critical characteristics), evaluation, receipt and acceptance of commercial-grade services or items to assure they will perform satisfactorily in service in safety-related applications.
- If there is insufficient evidence of implementation of a QA program, the initial evaluation is of the existence of a QA program addressing the scope of services to be provided. The initial audit is performed after the supplier has completed sufficient work to demonstrate that its organization is implementing a QA program.

7.2 NQA-1-1994 Commitment / Exceptions

In establishing procurement verification controls, FPL commits to compliance with NQA-1-1994, Basic Requirement 7 and Supplement 7S-1, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 7S-1
 - FPL considers that other 10 CFR 50 licensees, Authorized Nuclear Inspection Agencies, National Institute of Standards and Technology, or other State and Federal agencies which may provide items or services to FPL plants are not required to be evaluated or audited.
 - When purchasing commercial grade calibration services from a calibration laboratory, procurement source evaluation and selection measures need not be performed provided each of the following conditions are met:
 - (1) The purchase documents impose any additional technical and administrative requirements, as necessary, to comply with the FPL QA program and technical provisions. At a minimum, the purchase document shall require that the calibration certificate/report include identification of the laboratory equipment/standard used.
 - (2) The purchase documents require reporting as-found calibration data when calibrated items are found to be out-of-tolerance.

Quality Assurance Program Description

SECTION 7 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES (CONTINUED)

- (3) A documented review of the supplier's accreditation will be performed and will include a verification of the following:
 - The calibration laboratory holds a domestic (United States) accreditation by any one of the following accrediting bodies, which are recognized by the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA):
 - National Voluntary Laboratory Accreditation Program (NVLAP), administered by the National Institute of Standards & Technology;
 - American Association for Laboratory Accreditation (A2LA);
 - ACLASS Accreditation Services (ACLASS);
 - International Accreditation Service (IAS);
 - Laboratory Accreditation Bureau (L-A-B);
 - Other NRC-approved laboratory accrediting body.
 - The accreditation encompasses ANSI/ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories."
 - The published scope of accreditation for the calibration laboratory covers the necessary measurement parameters, range, and uncertainties.
- For Section 8.1, FPL considers documents that may be stored in approved electronic media under FPL or vendor control, not physically located on the plant site, but are accessible from the respective nuclear facility site as meeting the NQA-1 requirement for documents to be available at the site. Following completion of the construction period, sufficient as-built documentation will be turned over to FPL to support operations. The FPL records management system will provide for timely retrieval of necessary records.
- In lieu of the requirements of Section 10, Commercial Grade Items, controls for commercial grade items and services are established in FPL documents using 10 CFR 21 and the guidance of EPRI NP-5652 as discussed in Generic Letter 89-02 and Generic Letter 91-05.
 - For commercial grade items, special quality verification requirements are established and described in FPL documents to provide the necessary assurance an item will perform satisfactorily in service. The FPL documents address determining the critical characteristics that ensure an item is suitable for its intended use, technical evaluation of the item, receipt requirements, and quality evaluation of the item.

Quality Assurance Program Description

SECTION 7 CONTROL OF PURCHASED MATERIAL, EQUIPMENT, AND SERVICES (CONTINUED)

- FPL will also use other appropriate approved regulatory means and controls to support FPL commercial grade dedication activities. One example of this is Electric Power Research Institute (EPRI) Topical Report TR-106439, "Guideline on Evaluation and Acceptance of Commercial Grade Digital Equipment for Nuclear Safety Applications," dated July 17, 1997. FPL will assume 10 CFR 21 reporting responsibility for all items that FPL dedicates as safety-related.

Quality Assurance Program Description

SECTION 8 IDENTIFICATION AND CONTROL OF MATERIALS, PARTS, AND COMPONENTS

FPL has established the necessary measures and governing procedures to identify and control items to prevent the use of incorrect or defective items. This includes controls for consumable materials and items with limited shelf life. The identification of items is maintained throughout fabrication, erection, installation and use so that the item can be traced to its documentation, consistent with the item's effect on safety. Identification locations and methods are selected so as not to affect the function or quality of the item.

8.1 NQA-1-1994 Commitment

In establishing provisions for identification and control of items, FPL commits to compliance with NQA-1-1994, Basic Requirement 8 and Supplement 8S-1.

Quality Assurance Program Description

SECTION 9 CONTROL OF SPECIAL PROCESSES

FPL has established the necessary measures and governing procedures to assure that special processes that require interim process controls to assure quality, such as welding, heat treating, and nondestructive examination, are controlled. These provisions include assuring that special processes are accomplished by qualified personnel using qualified procedures and equipment. Personnel are qualified and special processes are performed in accordance with applicable codes, standards, specifications, criteria or other specially established requirements. Special processes are those where the results are highly dependent on the control of the process or the skill of the operator, or both, and for which the specified quality cannot be fully and readily determined by inspection or test of the final product.

9.1 NQA-1-1994 Commitment

In establishing measures for the control of special processes, FPL commits to compliance with NQA-1-1994, Basic Requirement 9 and Supplement 9S-1.

Quality Assurance Program Description

SECTION 10 INSPECTION

FPL has established the necessary measures and governing procedures to implement inspections that assure items, services, and activities affecting safety meet established requirements and conform to applicable documented specifications, instructions, procedures, and design documents. Inspection may also be applied to items, services, and activities affecting plant reliability and integrity. Types of inspections may include those verifications related to procurement, such as source, in-process, final, and receipt inspection, as well as construction, installation, and operations activities. Inspections are carried out by properly qualified persons independent of those who performed or directly supervised the work. Inspection results are documented.

10.1 Inspection Program

The inspection program establishes inspections (including surveillance of processes), as necessary to verify quality: (1) at the source of supplied items or services, (2) in-process during fabrication at a supplier's facility or at a Company facility, (3) for final acceptance of fabricated and/or installed items during construction, (4) upon receipt of items for a facility, as well as (5) during maintenance, modification, in-service, and operating activities.

The inspection program establishes requirements for planning inspections, such as the group or discipline responsible for performing the inspection, where inspection hold points are to be applied, determining applicable acceptance criteria, the frequency of inspection to be applied, and identification of special tools needed to perform the inspection. Inspection planning is performed by personnel qualified in the discipline related to the inspection and includes qualified inspectors or engineers. Inspection plans are based on, as a minimum, the importance of the item to the safety of the facility, the complexity of the item, technical requirements to be met, and design specifications. Where significant changes in inspection activities for the facilities are to occur, management responsible for the inspection programs evaluate the resource and planning requirements to ensure effective implementation of the inspection program.

Inspection program documents establish requirements for performing the planned inspections, and documenting required inspection information such as rejection, acceptance, and re-inspection results, and the person(s) performing the inspection.

Inspection results are documented by the inspector, reviewed by authorized personnel qualified to evaluate the technical adequacy of the inspection results, and controlled by instructions, procedures, and drawings.

10.2 Inspector Qualification

FPL has established qualification programs for personnel performing quality inspections. The qualification program requirements are described in Part II, Section 2. These qualification programs are applied to individuals performing quality inspections regardless of the functional group where they are assigned.

Quality Assurance Program Description

SECTION 10 INSPECTION (CONTINUED)

10.3 NQA-1-1994 Commitment / Exceptions

In establishing inspection requirements, FPL commits to compliance with NQA-1-1994, Basic Requirement 10, Supplement 10S-1 and Subpart 2.4, with the following clarification. In addition, FPL commits to compliance with the requirements of Subparts 2.5 and 2.8 for establishing appropriate inspection requirements.

- Subpart 2.4 commits FPL to IEEE 336-1985. IEEE 336-1985 refers to IEEE 498-1985. Both IEEE 336 -1985 and IEEE 498-1985 use the definition of "Safety Systems Equipment" from IEEE 603-1980. FPL commits to the definition of Safety Systems Equipment in IEEE 603- 1980, but does not commit to the balance of that standard. This definition is only applicable to equipment in the context of Subpart 2.4.
- An additional exception to Subpart 2.4 is addressed in Part II, Section 12 of the QAPD.
- Where inspections at the operating facility are performed by persons within the same organization (e.g., Maintenance group), FPL takes exception to the requirements of NQA-1-1994, Supplement 10S-1, Section 3.1, the inspectors report to the quality control management while performing those inspections.

Quality Assurance Program Description

SECTION 11 TEST CONTROL

FPL has established the necessary measures and governing procedures to demonstrate that items subject to the provisions of the QAPD will perform satisfactorily in service, that the plant can be operated safely and as designed, and that the coordinated operation of the plant as a whole is satisfactory. These programs include criteria for determining when testing is required, such as proof tests before installation, pre-operational tests, post-maintenance tests, post-modification tests, in-service tests, and operational tests (such as surveillance tests required by Plant Technical Specifications), to demonstrate that performance of plant systems is in accordance with design. Programs also include provisions to establish and adjust test schedules, and to maintain status for periodic or recurring tests. Tests are performed according to applicable procedures that include, consistent with the effect on safety: (1) instructions and prerequisites to perform the test, (2) use of proper test equipment, (3) acceptance criteria, and (4) mandatory verification points as necessary to confirm satisfactory test completion. Test results are documented and evaluated by the organization performing the test and reviewed by a responsible authority to assure that the test requirements have been satisfied. If acceptance criteria are not met, re-testing is performed as needed to confirm acceptability following correction of the system or equipment deficiencies that caused the failure.

The initial start-up test program is planned and scheduled to permit safe fuel loading and start-up; to increase power in safe increments; and to perform major testing at specified power levels. If tests require the variation of operating parameters outside of their normal range, the limits within which such variation is permitted will be prescribed. The scope of the testing demonstrates, insofar as practicable, that the plant is capable of withstanding the design transients and accidents. For new facility construction, the suitability of facility operating procedures is checked to the maximum extent possible during the pre-operational and initial start-up test programs.

Tests are performed and results documented in accordance with applicable technical and regulatory requirements, including those described in the Technical Specifications and SAR. Test programs ensure appropriate retention of test data in accordance with the records requirements of the QAPD. Personnel that perform or evaluate tests are qualified in accordance with the requirements established in Part II, Section 2.

11.1 NQA-1-1994 Commitment

In establishing provisions for testing, FPL commits to compliance with NQA-1-1994, Basic Requirement 11 and Supplement 11S-1.

11.2 NQA-1-1994 Commitment for Computer Program Testing

FPL establishes and implements provisions to assure that computer software used in applications affecting safety is prepared, documented, verified and tested, and used such that the expected output is obtained and configuration control maintained. To this end FPL commits to compliance with the requirements of NQA-1-1994, Supplement 11S-2, and Subpart 2.7 to establish the appropriate provisions.

Quality Assurance Program Description

SECTION 12 CONTROL OF MEASURING AND TEST EQUIPMENT

FPL has established the necessary measures and governing procedures to control the calibration, maintenance, and use of measuring and test equipment (M&TE) that provides information important to safe plant operation. The provisions of such procedures cover equipment such as indicating and actuating instruments and gages, tools, reference and transfer standards, and nondestructive examination equipment. The suppliers of commercial-grade calibration services are controlled as described in Part II, Section 7.

12.1 Installed Instrument and Control Devices

For the operations phase of the facilities, FPL has established and implements procedures for the calibration and adjustment of instrument and control devices installed in the facility. The calibration and adjustment of these devices is accomplished through the facility maintenance programs to ensure the facility is operated within design and technical requirements. Appropriate documentation will be maintained for these devices to indicate the control status, when the next calibration is due, and identify any limitations on use of the device.

12.2 NQA-1-1994 Commitment / Exceptions

In establishing provisions for control of measuring and test equipment, FPL commits to compliance with NQA-1-1994, Basic Requirement 12 and Supplement 12S-1 with the following clarification and exception:

- The out of calibration conditions described in paragraph 3.2 of Supplement 12S-1 refers to when the M&TE is found out of the required accuracy limits (i.e., out of tolerance) during calibration.
- Measuring and test equipment are not required to be marked with the calibration status where it is impossible or impractical due to equipment size or configuration (such as the label will interfere with operation of the device) provided the required information is maintained in suitable documentation traceable to the device. This exception also applies to the calibration labeling requirement stated in NQA-1-1994, Subpart 2.4, Section 7.2.1 (ANSI/IEEE Std. 336-1985).

Quality Assurance Program Description

SECTION 13 HANDLING, STORAGE, AND SHIPPING

FPL has established the necessary measures and governing procedures to control handling, storage, packaging, shipping, cleaning, and preservation of items to prevent inadvertent damage or loss, and to minimize deterioration. These provisions include specific procedures, when required to maintain acceptable quality of the items important to the safe operations of the plant. Items are appropriately marked and labeled during packaging, shipping, handling and storage to identify, maintain, and preserve the item's integrity and indicate the need for special controls. Special controls (such as containers, shock absorbers, accelerometers, inert gas atmospheres, specific moisture content levels and temperature levels) are provided when required to maintain acceptable quality.

Special or additional handling, storage, shipping, cleaning and preservation requirements are identified and implemented as specified in procurement documents and applicable procedures. Where special requirements are specified, the items and containers (where used) are suitably marked.

Special handling tools and equipment are used and controlled as necessary to ensure safe and adequate handling. Special handling tools and equipment are inspected and tested at specified time intervals and in accordance with procedures to verify that the tools and equipment are adequately maintained.

Operators of special handling and lifting equipment are experienced or trained in the use the equipment. During the operational phase, FPL establishes and implements controls over hoisting, rigging and transport activities to the extent necessary to protect the integrity of the items involved, as well as potentially affected nearby structures and components. Where required, FPL complies with applicable hoisting, rigging and transportation regulations and codes.

13.1 Housekeeping

Housekeeping practices are established to account for conditions or environments that could affect the quality of structures, systems and components within the plant. This includes control of cleanliness of facilities and materials, fire prevention and protection, disposal of combustible material and debris, control of access to work areas, protection of equipment, radioactive contamination control and storage of solid radioactive waste. Housekeeping practices help assure that only proper materials, equipment, processes and procedures are used and that the quality of items is not degraded. Necessary procedures or work instructions, such as for electrical bus and control center cleaning, cleaning of control consoles, and radioactive decontamination are developed and used.

Quality Assurance Program Description

SECTION 13 HANDLING, STORAGE, AND SHIPPING (CONTINUED)

13.2 NQA-1-1994 Commitment / Exceptions

In establishing provisions for handling, storage and shipping, FPL commits to compliance with NQA-1-1994, Basic Requirement 13 and Supplement 13S-1. FPL also commits, during the construction and pre-operational phase of the plant, to compliance with the requirements of NQA-1-1994, Subpart 2.1, Subpart 2.2, and Subpart 3.2, Appendix 2.1, with the following clarifications and exceptions:

NQA-1-1994, Subpart 2.1

- Subpart 2.1, Section 3.1 and 3.2 establish criteria for classifying items into cleanliness classes and requirements for each class. Instead of using the cleanliness level system of Subpart 2.1, FPL may establish cleanliness requirements on a case-by-case basis, consistent with the other provisions of Subpart 2.1. FPL establishes appropriate cleanliness controls for work on safety-related equipment to minimize introduction of foreign material and maintain system/component cleanliness throughout maintenance or modification activities, including documented verification of absence of foreign material prior to system closure.

NQA-1-1994, Subpart 2.2

- Subpart 2.2, Section 2.2 establishes criteria for classifying items into protection levels. Instead of classifying items into protection levels during the operational phase, FPL may establish controls for the packaging, shipping, handling, and storage of such items on a case-by-case basis with due regard for the item's complexity, use, and sensitivity to damage. Prior to installation or use, the items are inspected and serviced as necessary to assure that no damage or deterioration exists which could affect their function.
- Subpart 2.2, Section 6.6, "Storage Records:" This section requires written records be prepared containing information on personnel access. As an alternative to this requirement, FPL documents establish controls for storage areas that describe those authorized to access areas and the requirements for recording access of personnel. However, these records of access are not considered quality records and will be retained in accordance with the administrative controls of the applicable plant.
- Subpart 2.2, Section 7.1 refers to Subpart 2.15 for requirements related to handling of items. The scope of Subpart 2.15 includes hoisting, rigging and transporting of items for the nuclear power plants during construction.

Quality Assurance Program Description

SECTION 13 HANDLING, STORAGE, AND SHIPPING (CONTINUED)

NQA-1-1994, Subpart 2.3

- Subpart 2.3, Section 2.3 requires the establishment of five zone designations for housekeeping cleanliness controls. Instead of the five-level zone designation, FPL bases its control over housekeeping activities on a consideration of what is necessary and appropriate for the activity involved. The controls are implemented through procedures or instructions which, in the case of maintenance or modification work, are developed on a case-by-case basis. Factors considered in developing the procedures and instructions include cleanliness control, personnel safety, fire prevention and protection, radiation control and security. The procedures and instructions make use of standard janitorial and work practices to the extent possible.

NQA-1-1994, Subpart 3.2

Subpart 3.2, Appendix 2.1: Only Section 3 precautions are being committed to in accordance with RG 1.37. In addition, a suitable chloride stress-cracking inhibitor should be added to the fresh water used to flush systems containing austenitic stainless steels.

SECTION 14 INSPECTION, TEST, AND OPERATING STATUS

FPL has established the necessary measures and governing procedures to identify the inspection, test, and operating status of items and components subject to the provisions of the QAPD in order to maintain personnel and reactor safety and avoid inadvertent operation of equipment. Where necessary to preclude inadvertent bypassing of inspections or tests, or to preclude inadvertent operation, these measures require the inspection, test or operating status be verified before release, fabrication, receipt, installation, test or use. These measures also establish the necessary authorities and controls for the application and removal of status indicators or labels.

In addition, temporary design changes (temporary modifications), such as temporary bypass lines, electrical jumpers and lifted wires, and temporary trip-point settings, are controlled by procedures that include requirements for appropriate installation and removal, independent/concurrent verifications and status tracking.

Administrative procedures also describe the measures taken to control altering the sequence of required tests, inspections, and other operations. Review and approval for these actions is subject to the same control as taken during the original review and approval of tests, inspections, and other operations.

14.1 NQA-1-1994 Commitment

In establishing measures for control of inspection, test and operating status, FPL commits to compliance with NQA-1-1994, Basic Requirement 14.

Quality Assurance Program Description

SECTION 15 NONCONFORMING SERVICES, MATERIALS, PARTS, OR COMPONENTS

FPL has established the necessary measures and governing procedures to control items, including services, that do not conform to specified requirements to prevent inadvertent installation or use. Controls provide for identification, documentation, evaluation, segregation when practical, and disposition of nonconforming items, and for notification to affected organizations. Controls are provided to address conditional release of nonconforming items for use on an at-risk basis prior to resolution and disposition of the nonconformance, including maintaining identification of the item and documenting the basis for such release. Conditional release of nonconforming items for installation requires the approval of the designated management. Nonconformances are corrected or resolved prior to depending on the item to perform its intended safety function. Nonconformances are evaluated for impact on operability of quality structures, systems, and components to assure that the final condition does not adversely affect safety, operation, or maintenance of the item or service. Nonconformances to design requirements dispositioned as repair or use-as-is are subject to design control measures commensurate with those applied to the original design. Nonconformance dispositions are reviewed for adequacy, analysis of quality trends, and reports provided to the designated management. Significant trends are reported to management in accordance with FPL procedures, regulatory requirements, and industry standards.

15.1 Reporting Program

FPL has the necessary measures and governing procedures that implement a reporting program that conforms to the requirements of 10 CFR 52, 10 CFR 50.55 and 10 CFR 21 during design and construction and 10 CFR 21 during operations.

15.2 NQA-1-1994 Commitment

In establishing measures for nonconforming materials, parts, or components, FPL commits to compliance with NQA-1-1994, Basic Requirement 15, and Supplement 15S-1.

Quality Assurance Program Description

SECTION 16 CORRECTIVE ACTION

FPL has established the necessary measures and governing procedures to promptly identify, control, document, classify and correct conditions adverse to quality. FPL procedures assure that corrective actions are documented and initiated following the determination of conditions adverse to quality in accordance with regulatory requirements and applicable quality standards. FPL procedures require personnel to identify known conditions adverse to quality. When complex issues arise where it cannot be readily determined if a condition adverse to quality exists, FPL documents establish the requirements for documentation and timely evaluation of the issue. Reports of conditions adverse to quality are analyzed to identify trends. Significant conditions adverse to quality and significant adverse trends are documented and reported to responsible management. In the case of a significant condition adverse to quality, the cause is determined and actions to preclude recurrence are taken.

In the case of suppliers working on safety-related activities, or other similar situations, FPL may delegate specific responsibilities of the Corrective Action program but FPL maintains responsibility for the program's effectiveness.

16.1 Reporting Program

FPL has the necessary measures and governing procedures that implement a reporting program that conforms to the requirements of 10 CFR 52, 10 CFR 50.55 and/or 10 CFR 21 during design and construction, and 10 CFR 21 during operations.

16.2 NQA-1-1994 Commitment

In establishing provisions for corrective action, FPL commits to compliance with NQA-1-1994, Basic Requirement 16.

Quality Assurance Program Description

SECTION 17 QUALITY ASSURANCE RECORDS

FPL has the necessary measures and governing procedures to ensure that sufficient records of items and activities affecting quality are developed, reviewed, approved, issued, used, and revised to reflect completed work. The provisions of such procedures establish the scope of the records retention program for FPL and include requirements for records administration, including receipt, preservation, retention, storage, safekeeping, retrieval, access controls, user privileges, and final disposition.

17.1 Record Retention

Measures are established that ensure that sufficient records of completed items and activities affecting quality are appropriately stored. Records of activities for design, engineering, procurement, manufacturing, construction, inspection and test, installation, pre-operation, startup, operations, maintenance, modification, decommissioning, and audits and their retention times are defined in appropriate procedures. The records and retention times are based on Regulatory Position C.2 and Table 1, of Regulatory Guide 1.28, Revision 3 for design, construction, and initial start-up. Retention times for operations phase records are based on construction records that are similar in nature.

17.2 Electronic Records

When using optical discs for electronic records storage and retrieval systems, FPL complies with the NRC guidance in Generic Letter 88-18, "Plant Record Storage on Optical Disks." FPL will manage the storage of QA Records in electronic media consistent with the intent of RIS 2000-18 and associated NIRMA Guidelines TG 11-1998, TG15-1998, TG16-1998, and TG21-1998.

17.3 NQA-1-1994 Commitment / Exceptions

In establishing provisions for records, FPL commits to compliance with NQA-1-1994, Basic Requirement 17 and Supplement 17S-1, with the following clarifications and exceptions:

- NQA-1-1994, Supplement 17S-1
 - Supplement 17S-1, Section 4.2(b), requires records to be firmly attached in binders or placed in folders or envelopes for storage in steel file cabinets or on shelving in containers. For hard-copy records maintained by FPL, the records are suitably stored in steel file cabinets or on shelving in containers, except that methods other than binders, folders or envelopes may be used to organize the records for storage.

Quality Assurance Program Description

SECTION 18 AUDITS

FPL has established the necessary measures and governing procedures to implement audits to verify that activities covered by the QAPD are performed in conformance with the requirements established. The audit programs are themselves reviewed for effectiveness as a part of the overall audit process.

18.1 Performance of Audits

Internal audits of selected aspects of licensing, design, construction phase and operating activities are performed with a frequency commensurate with safety significance and in a manner which assures that audits of safety-related activities are completed. During the early portions of NNP activities, audits will focus on areas including, but not limited to, procurement, and corrective action. Functional areas of an organization's QA program for auditing include, at a minimum, verification of compliance and effectiveness of implementation of internal rules, procedures (e.g., operating, design, procurement, maintenance, modification, refueling, surveillance, test, security, radiation control procedures, and the emergency plan), Technical Specifications, regulations and license conditions, programs for training, retraining, qualification and performance of operating staff, corrective actions, and observation of performance of operating, refueling, maintenance and modification activities, including associated record keeping.

The audits are scheduled on a formal preplanned audit schedule. The audit system is reviewed periodically and revised as necessary to assure coverage commensurate with current and planned activities. Additional audits may be performed as deemed necessary by management. The scope of the audit is determined by the quality status and safety importance of the activities being performed. These audits are conducted by trained personnel not having direct responsibilities in the area being audited and in accordance with preplanned and approved audit plans or checklists, under the direction of a qualified lead auditor and the cognizance of the Quality Manager responsible for the day to day program as documented in Section 1.

FPL is responsible for conducting periodic internal and external audits. Internal audits are conducted to determine the adequacy of programs and procedures (by representative sampling), and to determine if they are meaningful and comply with the overall QAPD. External audits determine the adequacy of supplier and contractor quality assurance programs.

The results of each audit are reported in writing to the responsible Senior Executive responsible for the Quality Assurance program at the Site, or designee, as appropriate. Additional internal distribution is made to other concerned management levels in accordance with approved procedures.

Management responds to all audit findings and initiates corrective action where indicated. Where corrective action measures are indicated, documented follow-up of applicable areas through inspections, review, re-audits, or other appropriate means is conducted to verify implementation of assigned corrective action.

Audits of suppliers of safety-related components and/or services are conducted as described in Section 7.1.

Quality Assurance Program Description

SECTION 18 AUDITS (CONTINUED)

18.2 Internal Audits

Internal audits of organization and facility activities, conducted prior to placing the facility in operation, should be performed in such a manner as to assure that an audit of all applicable QA program elements is completed for each functional area at least once each year or at least once during the life of the activity, whichever is shorter.

Internal audits of activities, conducted after placing the facility in operation, should be performed in such a manner as to assure that an audit of all applicable QA program elements is completed for each functional area within a period of two years. Internal audit frequencies of well established activities, conducted after placing the facility in operation, may be extended one year at a time beyond the above two-year interval based on the results of an annual evaluation of the applicable functional area and objective evidence that the functional area activities are being satisfactorily accomplished. The evaluation should include a detailed performance analysis of the functional area based upon applicable internal and external source data and due consideration of the impact of any functional area changes in responsibility, resources or management. However, the internal audit frequency interval should not exceed a maximum of four years. If an adverse trend is identified in the applicable functional area, the extension of the internal audit frequency interval should be rescinded and an audit scheduled as soon as practicable.

During the operations phase, audits are performed at a frequency commensurate with the safety significance of the activities and in such a manner to assure audits of all applicable QA program elements are completed within a period of two years. These audits will include, as a minimum, activities in the following areas:

1. The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions including administrative controls.
2. The performance, training, and qualifications of the facility staff.
3. The performance of activities required by the QAPD to meet the criteria of 10 CFR 50, Appendix B.
4. The Fire Protection Program and implementing procedures. A fire protection equipment and program implementation inspection and audit are conducted utilizing either a qualified off-site licensed fire protection engineer or an outside qualified fire protection consultant.
5. Other activities and documents considered appropriate by the Chief Nuclear Officer.

Audits may also be used to meet the periodic review requirements for Security, Emergency Preparedness, and Radiological Protection programs within the provisions of the applicable regulation.

Quality Assurance Program Description

SECTION 18 AUDITS (CONTINUED)

Internal audits include verification of compliance and effectiveness of the administrative controls established for implementing the requirements of the QAPD; regulations and license provisions; provisions for training, retraining, qualification, and performance of personnel performing activities covered by the QAPD; corrective actions taken following abnormal occurrences; and, observation of the performance of construction, fabrication, operating, refueling, maintenance, and modification activities including associated record keeping.

18.3 NQA-1-1994 Commitment

In establishing the independent audit program, FPL commits to compliance with NQA-1-1994, Basic Requirement 18 and Supplement 18S-1.

PART III NONSAFETY-RELATED SSC QUALITY CONTROL

SECTION 1 NON-SAFETY RELATED SSCs - SIGNIFICANT CONTRIBUTORS TO PLANT SAFETY

Specific program controls are applied to nonsafety-related SSCs, for which 10 CFR 50, Appendix B is not applicable, that are significant contributors to plant safety. The specific program controls consistent with applicable sections of the QAPD are applied to those items in a selected manner, targeted at those characteristics or critical attributes that render the SSC a significant contributor to plant safety.

The following clarify the applicability of the QA Program to the nonsafety-related SSCs and related activities, including the identification of exceptions to the QA Program described in Part II, Sections 1 through 18 taken for nonsafety-related SSCs.

1.1 Organization

The verification activities described in this part may be performed by the FPL line organization. The QA organization described in Part II is not required to perform these functions.

1.2 QA Program

FPL QA requirements for nonsafety-related SSCs are established in the QAPD and appropriate procedures. Suppliers of these SSCs or related services describe the quality controls applied in appropriate procedures. A new or separate QA program is not required.

1.3 Design Control

FPL has design control measures to ensure that the contractually established design requirements are included in the design. These measures ensure that applicable design inputs are included or correctly translated into the design documents, and deviations from those requirements are controlled. Design verification is provided through the normal supervisory review of the designer's work.

1.4 Procurement Document Control

Procurement documents for items and services obtained by or for FPL include or reference documents describing applicable design bases, design requirements, and other requirements necessary to ensure component performance. The procurement documents are controlled to address deviations from the specified requirements.

Quality Assurance Program Description

SECTION 1 NON-SAFETY RELATED SSCs - SIGNIFICANT CONTRIBUTORS TO PLANT SAFETY (CONTINUED)

1.5 Instructions, Procedures, and Drawings

FPL provides documents such as, but not limited to, written instructions, plant procedures, drawings, vendor technical manuals, and special instructions in work orders, to direct the performance of activities affecting quality. The method of instruction employed provides an appropriate degree of guidance to the personnel performing the activity to achieve acceptable functional performance of the SSC.

1.6 Document Control

FPL controls the issuance and change of documents that specify quality requirements or prescribe activities affecting quality to ensure that correct documents are used. These controls include review and approval of documents, identification of the appropriate revision for use, and measures to preclude the use of superseded or obsolete documents.

1.7 Control of Purchased Items and Services

FPL employs measures, such as inspection of items or documents upon receipt or acceptance testing, to ensure that all purchased items and services conform to appropriate procurement documents.

1.8 Identification and Control of Purchased Items

FPL employs measures where necessary, to identify purchased items and preserve their functional performance capability. Storage controls take into account appropriate environmental, maintenance, or shelf life restrictions for the items.

1.9 Control of Special Processes

FPL employs process and procedure controls for special processes, including welding, heat treating, and nondestructive testing. These controls are based on applicable codes, standards, specifications, criteria, or other special requirements for the special process.

1.10 Inspection

FPL uses documented instructions to ensure necessary inspections are performed to verify conformance of an item or activity to specified requirements or to verify that activities are satisfactorily accomplished. These inspections are performed by knowledgeable personnel who may be in the same line organization as those performing the activity being inspected.

Quality Assurance Program Description

SECTION 1 NON-SAFETY RELATED SSCs - SIGNIFICANT CONTRIBUTORS TO PLANT SAFETY (CONTINUED)

1.11 Test Control

FPL employs measures to identify required testing that demonstrates that equipment conforms to design requirements. These tests are performed in accordance with test instructions or procedures. The test results are recorded, and authorized individuals evaluate the results to ensure that test requirements are met.

1.12 Control of Measuring and Test Equipment (M&TE)

FPL employs measures to control M&TE use, and calibration and adjustment at specific intervals or prior to use.

1.13 Handling, Storage, and Shipping

FPL employs measures to control the handling, storage, cleaning, packaging, shipping, and preservation of items to prevent damage or loss and to minimize deterioration. These measures include appropriate marking or labels, and identification of any special storage or handling requirements.

1.14 Inspection, Test, and Operating Status

FPL employs measures to identify items that have satisfactorily passed required tests and inspections and to indicate the status of inspection, test, and operability as appropriate.

1.15 Control of Nonconforming Items

FPL employs measures to identify and control items that do not conform to specified requirements to prevent their inadvertent installation or use.

1.16 Corrective Action

FPL employs measures to ensure that failures, malfunctions, deficiencies, deviations, defective components, and nonconformances are properly identified, reported, and corrected.

1.17 Records

FPL employs measures to ensure records are prepared and maintained to furnish evidence that the above requirements for design, procurement, document control, inspection, and test activities have been met.

Quality Assurance Program Description

SECTION 1 NON-SAFETY RELATED SSCs - SIGNIFICANT CONTRIBUTORS TO PLANT SAFETY (CONTINUED)

1.18 Audits

FPL employs measures for line management to periodically review and document the adequacy of the process, including taking any necessary corrective action. Audits independent of line management are not required. Line management is responsible for determining whether reviews conducted by line management or audits conducted by any organization independent of line management are appropriate. If performed, audits are conducted and documented to verify compliance with design and procurement documents, instructions, procedures, drawings, and inspection and test activities. Where the measures of this part (Part III) are implemented by the same programs, processes, or procedures as the comparable activities of Part II, the audits performed under the provisions of Part II may be used to satisfy the review requirements of this Section (Part III, Section 1.18).

SECTION 2 NON-SAFETY RELATED SSCs CREDITED FOR REGULATORY EVENTS

The following criteria apply to fire protection (10 CFR 50.48), anticipated transients without scram (ATWS) (10 CFR 50.62), the station blackout (SBO) (10 CFR 50.63) SSCs that are not safety-related;

- FPL implements quality requirements for the fire protection system in accordance with Regulatory Position 1.7, "Quality Assurance," in Regulatory Guide 1.189, "Fire Protection for Operating Nuclear Power Plants."
- FPL implements the quality requirements for ATWS equipment in accordance with Generic Letter 85-06, "Quality Assurance Guidance for ATWS Equipment That Is Not Safety Related."
- FPL implements quality requirements for SBO equipment in accordance with Regulatory Position 3.5, "Quality Assurance and Specific Guidance for SBO Equipment That Is Not Safety Related," and Appendix A, "Quality Assurance Guidance for Nonsafety Systems and Equipment," in Regulatory Guide 1.155, "Station Blackout."

PART IV REGULATORY COMMITMENTS

NRC REGULATORY GUIDES AND QUALITY ASSURANCE STANDARDS

This section identifies the NRC Regulatory Guides and the other quality assurance standards which have been selected to supplement and support the FPL QAPD.

See FSAR Chapter 1 for the FPL evaluation of conformance with the guidance in NRC Regulatory Guides in effect six months prior to the submittal date of the application.

REGULATORY GUIDES

Regulatory Guide 1.8, Rev. 3, May 2000, Qualification and Training of Personnel for Nuclear Power Plants

Regulatory Guide 1.8 provides guidance that is acceptable to the NRC staff regarding qualifications and training for nuclear power plant personnel.

FPL identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in FSAR Chapter 1.

Regulatory Guide 1.26, Revision 4, March 2007 - Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants
Regulatory Guide 1.26 defines classification of systems and components.

FPL identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in FSAR Chapter 1.

Regulatory Guide 1.28, Rev. 3, August 1985, Quality Assurance Program Requirements (Design and Construction)

Regulatory Guide 1.28 describes a method acceptable to the NRC staff for complying with the provisions of Appendix B with regard to establishing and implementing the requisite quality assurance program for the design and construction of nuclear power plants.

FPL identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in FSAR Chapter 1.

Regulatory Guide 1.29, Revision 4, March 2007 - Seismic Design Classification

Regulatory Guide 1.29 defines systems required to withstand a safe shutdown earthquake (SSE).

FPL identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in FSAR Chapter 1.

Quality Assurance Program Description

NRC REGULATORY GUIDES AND QUALITY ASSURANCE STANDARDS (CONTINUED)

Regulatory Guide 1.33, Revision 2, February 1978, Quality Assurance Program Requirements (Operations)

Regulatory Guide 1.33 describes a method acceptable to the NRC staff for complying with the Commission's regulations with regard to overall quality assurance program requirements for the operation phase of nuclear power plants.

FPL identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in FSAR Chapter 1.

Regulatory Guide 1.37, Revision 1, March 2007 – Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants

Regulatory Guide 1.37 provides guidance on specifying water quality and precautions related to the use of alkaline cleaning solutions and chelating agents.

FPL identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in FSAR Chapter 1.

Regulatory Guide 1.54, Revision 1, July 2000 - Service Level I, II, and III Protective Coatings Applied to Nuclear Power Plants

Regulatory Guide 1.54 provide guidance for the application of protective coatings within nuclear power plants to protect surfaces from corrosion, contamination from radionuclides, and for wear protection.

FPL identifies conformance and exceptions for the applicable regulatory position guidance provided in this regulatory guide in FSAR Chapter 1.

STANDARDS

ASME NQA-1-1994 Edition - Quality Assurance Requirements for Nuclear Facility Applications

FPL commits to NQA-1-1994, Parts I, II, and III, as described in the foregoing sections of this document.

Nuclear Information and Records Management Association, Inc. (NIRMA) Technical Guides (TGs)

FPL commits to NIRMA TGs as described in Part II, Section 17.

PART V ADDITIONAL QUALITY ASSURANCE AND ADMINISTRATIVE CONTROLS FOR THE PLANT OPERATIONAL PHASE

FPL includes the requirements of Part V to establish the necessary measures and governing procedures for the operations phase of the plant.

SECTION 1 DEFINITIONS

FPL uses the definitions of terms as provided in Section 4 of the Introduction of NQA-1-1994 in interpreting the requirements of NQA-1-1994 and the other standards to which the QAPD commits. In addition, definitions are provided for the following terms not covered in NQA-1-1994:

administrative controls: rules, orders, instructions, procedures, policies, practices and designations of authority and responsibility

experiments: performance of plant operations carried out under controlled conditions in order to establish characteristics or values not previously known

independent review: review completed by personnel not having direct responsibility for the work function under review regardless of whether they operate as a part of an organizational unit or as individual staff members (see review)

nuclear power plant: any plant using a nuclear reactor to produce electric power, process steam or space heating

on-site operating organization: on-site personnel concerned with the operation, maintenance and certain technical services

operating activities: work functions associated with normal operation and maintenance of the plant, and technical services routinely assigned to the on-site operating organization

operational phase: that period of time during which the principal activity is associated with normal operation of the plant. This phase of plant life is considered to begin formally with commencement of initial fuel loading, and ends with plant decommissioning

review: a deliberately critical examination, including observation of plant operation, evaluation of assessment results, procedures, certain contemplated actions, and after-the-fact investigations of abnormal conditions

supervision: direction of personnel activities or monitoring of plant functions by an individual responsible and accountable for the activities they direct or monitor

surveillance testing: periodic testing to verify that safety related structures, systems, and components continue to function or are in a state of readiness to perform their functions

system: an integral part of nuclear power plant comprising components which may be operated or used as a separate entity to perform a specific function

Quality Assurance Program Description

SECTION 2 REVIEW OF ACTIVITIES AFFECTING SAFE PLANT OPERATION

2.1 Onsite Operating Organization Review

The FPL onsite organization employs reviews, both periodic and as situations demand, to evaluate plant operations and plan future activities. The important elements of the reviews are documented and subjects of potential concern for the independent review described below are brought to the attention of the Plant Manager. The reviews are part of the normal duties of plant supervisory personnel in order to provide timely and continuing monitoring of operating activities in order to assist the Plant Manager in keeping abreast of general plant conditions and to verify that day-to-day operations are conducted safely in accordance with the established administrative controls. The Plant Manager ensures the timely referral of the applicable matters discussed in the reviews to appropriate management and independent reviewers.

2.2 Independent Review

Activities occurring during the operational phase shall be independently reviewed on a periodic basis. The independent review program shall be functional prior to initial core loading. The independent review function performs the following:

- a. Reviews proposed changes to the facility as described in the safety analysis report (SAR). The Independent Review Committee (IRC) also verifies that changes do not adversely affect safety and if a technical specification change or NRC review is required.
- b. Reviews proposed tests and experiments not described in the SAR prior to implementation. Verifies the determination of whether changes to proposed tests and experiments not described in the SAR require a technical specification change or license amendment.
- c. Reviews proposed technical specification changes and license amendments relating to nuclear safety prior to NRC submittal and implementation, except in those cases where the change is identical to a previously approved change.
- d. Reviews violations, deviations, and events that are required to be reported to the NRC. This review includes the results of investigations and recommendations resulting from such investigations to prevent or reduce the probability of recurrence of the event.
- e. Reviews any matter related to nuclear safety that is requested by the Site Vice President
- f. Reviews corrective actions for significant conditions adverse to quality.
- g. Reviews internal audit reports.
- h. Reviews the adequacy of the internal audit program every 24 months.

Quality Assurance Program Description

SECTION 2 REVIEW OF ACTIVITIES AFFECTING SAFE PLANT OPERATION (CONTINUED)

Independent Review Committee

1. An independent review committee is assigned independent review responsibilities.
2. The independent review committee reports to the Site Vice President.
3. The independent review committee is composed of no less than 5 persons and no more than a minority of members are from the on-site operating organization.

For example, at least 3 of the 5 members must be from off-site if there are 5 members on the committee. A minimum of the chairman or alternative chairman and 2 members must be present for all meetings.

4. During the period of initial operation, meetings are conducted no less frequently than once per calendar quarter. Afterwards meetings are conducted no less than twice a year.
5. Results of the meeting are documented and recorded.
6. Consultants and contractors are used for the review of complex problems beyond the expertise of the off site/on site independent review committee.
7. Persons on the independent review committee are qualified as follows:
 - a. Supervisor or Chairman of the Independent Review Committee
 - Education: baccalaureate in engineering or related science
 - Minimum experience: 6 years combined managerial and technical support
 - b. Independent Review Committee Members

Education: Baccalaureate in engineering or related science for those Independent review personnel who are required to review problems in:

- nuclear power plant operations,
- nuclear engineering,
- chemistry and radiochemistry,
- metallurgy,
- nondestructive testing,
- instrumentation and control,
- radiological safety,
- mechanical engineering, and electrical engineering.

Quality Assurance Program Description

SECTION 2 REVIEW OF ACTIVITIES AFFECTING SAFE PLANT OPERATION (CONTINUED)

High school diploma for those independent review personnel who are required to review problems in administrative control and quality assurance practices, training, and emergency plans and related procedures and equipment.

Minimum experience: 5 years experience in their own area of responsibility (nuclear power plant operations, nuclear engineering, chemistry and radiochemistry, metallurgy, nondestructive testing, instrumentation and control, radiological safety, mechanical engineering, and electrical engineering, administrative control and quality assurance practices, training, and emergency plans and related procedures and equipment).

Quality Assurance Program Description

SECTION 3 OPERATIONAL PHASE PROCEDURES

The following is a description of the various types of procedures used by FPL to govern the design, operation, and maintenance of its nuclear generating plants. FPL follows the guidance of Appendix A to Regulatory Guide 1.33 in identifying the types of activities that should have procedures or instructions to control the activity. Each procedure shall be sufficiently detailed for a qualified individual to perform the required function without direct supervision, but need not provide a complete description of the system or plant process.

3.1 Format and Content

Procedure format and content may vary from one location to the other. However, procedures include the following elements as appropriate to the purpose or task to be described:

- **Title/Status**
Each procedure is given a title descriptive of the work or subject it addresses, and includes a revision number and/or date and an approval status.
- **Purpose/Statement of Applicability/Scope**
The purpose for which the procedure is intended is clearly stated (if not clear from the title). The systems, structures, components, processes or conditions to which the procedure applies are also clearly described.
- **References**
Applicable references, including reference to appropriate Technical Specifications, are required. References are included within the body of the procedure when the sequence of steps requires other tasks to be performed (according to the reference) prior to or concurrent with a particular step.
- **Prerequisites/Initial Conditions**
Prerequisites/initial conditions identify those independent actions or procedures that must be accomplished and plant conditions which must exist prior to performing the procedure. A prerequisite applicable to only a specific portion of a procedure is so identified.
- **Precautions**
Precautions alert the user to those important measures to be used to protect equipment and personnel, including the public, or to avoid an abnormal or emergency situation during performance of the procedure. Cautionary notes applicable to specific steps are included in the main body of the procedure and are identified as such.
- **Limitations and Actions**
Limitations on the parameters being controlled and appropriate corrective measures to return the parameter to the normal control band are specified.

Quality Assurance Program Description

SECTION 3 OPERATIONAL PHASE PROCEDURES (CONTINUED)

- **Main Body**
The main body of the procedure contains the step-by-step instructions in the degree of detail necessary for performing the required function or task.
- **Acceptance Criteria**
The acceptance criteria provide the quantitative or qualitative criteria against which the success or failure (as of a test-type activity) of the step or action would be judged.
- **Checklists**
Complex procedures utilize checklists which may be included as part of the procedure or appended to it.

3.2 Procedure Types

Administrative Control Procedures

These include administrative procedures, directives, policies, standards, and similar documents that control the programmatic aspects of facility activities. These administrative documents ensure that the requirements of regulatory and license commitments are implemented. Several levels of administrative controls are applied ranging from those affecting the entire Company to those prepared at the implementing group level. These documents establish responsibilities, interfaces, and standard methods (rules of practice) for implementing programs. In addition to the administrative controls described throughout this QAPD, instructions governing the following activities are provided:

- **Operating Orders/Procedures**
Instructions of general and continuing applicability to the conduct of business to the plant staff are provided. Examples where these are applied include, but are not limited to, job turnover and relief, designation of confines of control room, definition of duties of operators and others, transmittal of operating data to management, filing of charts, limitations on access to certain areas and equipment, shipping and receiving instructions. Provisions are made for periodic review and updating of these documents, where appropriate.
- **Special Orders**
Management instructions, which have short-term applicability and require dissemination, are issued to encompass special operations, housekeeping, data taking, publications and their distribution, plotting process parameters, personnel actions, or other similar matters. Provisions are made for periodic review, updating, and cancellation of these documents, where appropriate.

Quality Assurance Program Description

SECTION 3 OPERATIONAL PHASE PROCEDURES (CONTINUED)

- **Plant Security and Visitor Control**

Procedures or instructions are developed to supplement features and physical barriers designed to control access to the plant and, as appropriate, to vital areas within the plant. Information concerning specific design features and administrative provisions of the plant security program is confidential and thus accorded limited distribution. The security and visitor control procedures consider, for example, physical provisions, such as: fences and lighting; lock controls for doors, gates and compartments containing sensitive equipment; and provisions for traffic and access control. Administrative provisions, such as: visitor sign-in and sign-out procedures; escorts and badges for visitors; emphasis on inspection, observation and challenging of strangers by operating crews; and a program of pre-employment screening for potential employees are also considered.

- **Temporary Procedures**

Temporary procedures may be used to direct operations during testing, refueling, maintenance, and modifications to provide guidance in unusual situations not within the scope of the normal procedures. These procedures ensure orderly and uniform operations for short periods when the plant, a system, or a component of a system is performing in a manner not covered by existing detailed procedures or has been modified or extended in such a manner that portions of existing procedures do not apply. Temporary Procedures include designation of the period of time during which they may be used and are subject to the procedure review process as applicable.

Engineering Procedures

These documents provide instructions for the preparation of engineering documents, engineering analysis, and implementation of engineering programs. This includes activities such as designs; calculations; fabrication, equipment, construction, and installation specifications; drawings; analysis and topical reports; and testing plans or procedures. They include appropriate references to industry codes and standards, design inputs, and technical requirements.

Installation Procedures

These documents provide instructions for the installation of components generally related to new construction and certain modification activities. They include appropriate reference to industry standards, installation specifications, design drawings, and supplier and technical manuals for the performance of activities. These documents include provisions, such as hold or witness points, for conducting and recording results of required inspections or tests. These documents may include applicable inspection and test instructions subject to the requirements for test and inspection procedures below.

Quality Assurance Program Description

SECTION 3 OPERATIONAL PHASE PROCEDURES (CONTINUED)

System Procedures

These documents contain instructions for energizing, filling, venting, draining, starting up, shutting down, changing modes of operation, and other instructions appropriate for operations of systems related to the safety of the plant. Actions to correct off-normal conditions are invoked following an operator observation or an annunciator alarm indicating a condition which, if not corrected, could degenerate into a condition requiring action under an emergency procedure. Separate procedures may be developed for correcting off-normal conditions for those events where system complexity may lead to operator uncertainty. Appropriate procedures will also be developed for the fire protection program.

Start-up Procedures

These documents contain instructions for starting the reactor from cold or hot conditions and establishing power operation. This includes documented determination that prerequisites have been met, including confirmation that necessary instruments are operable and properly set; valves are properly aligned, necessary system procedures, tests and calibrations have been completed; and required approvals have been obtained.

Shutdown Procedures

These documents contain guidance for operations during controlled shutdown and following reactor trips, including instructions for establishing or maintaining hot shutdown/standby or cold shutdown conditions, as applicable. The major steps involved in shutting down the plant are specified, including instructions for such actions as monitoring and controlling reactivity, load reduction and cooldown rates, sequence for activating or deactivating equipment, requirements for prompt analysis for causes of reactor trips or abnormal conditions requiring unplanned controlled shutdowns, and provisions for decay heat removal.

Power Operation and Load Changing Procedures

These documents contain instructions for steady-state power operation and load changing. These type documents include, as examples, provisions for use of control rods, chemical shim, coolant flow control, or any other system available for short-term or long-term control of reactivity, making deliberate load changes, responding to unanticipated load changes, and adjusting operating parameters.

Process Monitoring Procedures

These documents contain instructions for monitoring performance of plant systems to assure that core thermal margins and coolant quality are maintained in acceptable status at all times, that integrity of fission product barriers is maintained, and that engineered safety features and emergency equipment are in a state of readiness to keep the plant in a safe condition if needed. Maximum and minimum limits for process parameters are appropriately identified. Operating procedures address the appropriate nature and frequency of this monitoring.

Quality Assurance Program Description

SECTION 3 OPERATIONAL PHASE PROCEDURES (CONTINUED)

Fuel Handling Procedures

These documents contain instructions for core alterations, accountability of fuel and partial or complete refueling operations that include, for example, continuous monitoring of neutron flux throughout core loading, periodic data recording, audible annunciation of abnormal flux increases, and evaluation of core neutron multiplication to verify safety of loading increments. Procedures are also provided for receipt and inspection of new fuel, and for fuel movements in the spent fuel storage areas. Fuel handling procedures include prerequisites to verify the status of systems required for fuel handling and movement; inspection of replacement fuel and control rods; designation of proper tools, proper conditions for spent fuel movement, proper conditions for fuel cask loading and movement; and status of interlocks, reactor trip circuits and mode switches. These procedures provide requirements for refueling, including proper sequence, orientation and seating of fuel and components, rules for minimum operable instrumentation, actions for response to fuel damage, verification of shutdown margin, communications between the control room and the fuel handling station, independent verification of fuel and component locations, criteria for stopping fuel movements, and documentation of final fuel and component serial numbers (or other unique identifiers) and locations.

Maintenance Procedures

These documents contain instructions in sufficient detail to permit maintenance work to be performed correctly and safely, and include provisions, such as hold or witness points, for conducting and recording results of required inspections or tests. These documents may include applicable inspection or test instructions subject to the requirements for test and inspection procedures below. Appropriate referencing to other procedures, standards, specifications, or supplier manuals is provided. When not provided through other documents, instructions for equipment removal and return to service, and applicable radiation protection measures (such as protective clothing and radiation monitoring) will be included. Additional maintenance procedure requirements are addressed in NQA-1-1994, Subpart 2.18, Section 2.2, Procedures.

Radiation Control Procedures

These documents contain instructions for implementation of the radiation control program requirements necessary to meet regulatory commitments, including acquisition of data and use of equipment to perform necessary radiation surveys, measurements and evaluations for the assessment and control of radiation hazards. These procedures provide requirements for monitoring both external and internal exposures of employees, utilizing accepted techniques; routine radiation surveys of work areas; effluent and environmental monitoring in the vicinity of the plant; radiation monitoring of maintenance and special work activities, and for maintaining records demonstrating the adequacy of measures taken to control radiation exposures to employees and others.

Quality Assurance Program Description

SECTION 3 OPERATIONAL PHASE PROCEDURES (CONTINUED)

Calibration and Test Procedures

These documents contain instructions for periodic calibration and testing of instrumentation and control systems, and for periodic calibration of measuring and test equipment used in activities affecting the quality of these systems. These documents provide for meeting surveillance requirements and for assuring measurement accuracy adequate to keep safety-related parameters within operational and safety limits.

Chemical and Radiochemical Control Procedures

These documents contain instructions for chemical and radiochemical control activities and include: the nature and frequency of sampling and analyses; instructions for maintaining coolant quality within prescribed limits; and limitations on concentrations of agents that could cause corrosive attack, foul heat transfer surfaces, or become sources of radiation hazards due to activation. These documents also provide for the control, treatment and management of radioactive wastes, and control of radioactive calibration sources.

Emergency Operating Procedures

These documents contain instructions for response to potential emergencies so that a trained operator will know in advance the expected course of events that will identify an emergency and the immediate actions that are taken in response. Format and content of emergency procedures are based on NUREG and Owner's Group(s) guidance that identify potential emergency conditions and require such procedures to include, as appropriate, a title, symptoms to aid in identification of the nature of the emergency, automatic actions to be expected from protective systems, immediate operator actions for operation of controls or confirmation of automatic actions, and subsequent operator actions to return the reactor to a normal condition or provide for a safe extended shutdown period under abnormal or emergency conditions.

Emergency Plan Implementing Procedures

These documents contain instructions for activating the Emergency Response Organization and facilities, protective action levels, organizing emergency response actions, establishing necessary communications with local, state and federal agencies, and for periodically testing the procedures, communications and alarm systems to assure they function properly. Format and content of such procedures are such that requirements of each facility's NRC approved Emergency Plan are met.

Quality Assurance Program Description

SECTION 3 OPERATIONAL PHASE PROCEDURES (CONTINUED)

Test and Inspection Procedures

These documents provide the necessary measures to assure quality is achieved and maintained for the nuclear facilities. The instructions for tests and inspections may be included within other procedures, such as installation and maintenance procedures, but will contain the objectives, acceptance criteria, prerequisites for performing the test or inspection, limiting conditions, and appropriate instructions for performing the test or inspection, as applicable. These procedures also specify any special equipment or calibrations required to conduct the test or inspection and provide for appropriate documentation and evaluation by responsible authority to assure test or inspection requirements have been satisfied. Where necessary, hold or witness points are identified within the procedures and require appropriate approval for the work to continue beyond the designated point. These procedures provide for recording the date, identification of those performing the test or inspection, as-found condition, corrective actions performed (if any), and as-left condition, as appropriate for the subject test or inspection.

Quality Assurance Program Description

SECTION 4 CONTROL OF SYSTEMS AND EQUIPMENT IN THE OPERATIONAL PHASE

Permission to release systems and equipment for maintenance or modification is controlled by designated operating personnel and documented. Measures, such as installation of tags or locks and releasing stored energy, are used to ensure personnel and equipment safety. When entry into a closed system is required, FPL has established control measures to prevent entry of extraneous material and to assure that foreign material is removed before the system is reclosed. Administrative procedures require the designated operating personnel to verify that the system or equipment can be released and determine the length of time it may be out of service. In making this determination, attention is given to the potentially degraded degree of protection where one subsystem of a redundant safety system is not available for service. Conditions to be considered in preparing equipment for maintenance include, for example: shutdown margin; method of emergency core cooling; establishment of a path for decay heat removal; temperature and pressure of the system; valves between work and hazardous material; venting, draining and flushing; entry into closed vessels; hazardous atmospheres; handling hazardous materials; and electrical hazards.

When systems or equipment are ready to be returned to service, designated operating personnel control placing the items in service and document its functional acceptability. Attention is given to restoration of normal conditions, such as removal of jumpers or signals used in maintenance or testing, or actions such as returning valves, breakers or switches to proper start-up or operating positions from "test" or "manual" positions. Where necessary, the equipment placed into service receives additional surveillance during the run-in period.

Independent verifications, where appropriate, are used to ensure that the necessary measures have been implemented correctly. The minimum requirements and standards for using independent verification are established in company documents.

Quality Assurance Program Description

SECTION 5 PLANT MAINTENANCE

FPL establishes controls for the maintenance or modification of items and equipment subject to this QAPD to ensure quality at least equivalent to that specified in original design bases and requirements, such that safety-related structures, systems and components are maintained in a manner that assures their ability to perform their intended safety function(s). Maintenance activities (both corrective and preventive) are scheduled and planned so as not to unnecessarily compromise the safety of the plant.

In establishing controls for plant maintenance, FPL commits to compliance with NQA-1-1994, Subpart 2.18, with the following clarifications:

- Where Subpart 2.18 refers to the requirements of ANS-3.2, it shall be interpreted to mean the applicable standards and requirements established within the QAPD
- Section 2.3 requires cleanliness during maintenance to be in accordance with Subpart 2.1. The commitment to Subpart 2.1 is described in the QAPD, Part II, Section 13.2.



COVER SHEET

FINAL DATA REPORT

**GEOTECHNICAL EXPLORATION AND TESTING
TURKEY POINT COL PROJECT
FLORIDA CITY, FLORIDA**

October 6, 2008

Prepared By:

**MACTEC ENGINEERING AND CONSULTING, INC.
RALEIGH, NORTH CAROLINA**

MACTEC PROJECT No. 6468-07-1950

Prepared For:

**Bechtel Power Corporation
Subcontract No. 25409-102-HC4-CY00-00001**

**FINAL DATA REPORT Rev. 2
GEOTECHNICAL EXPLORATION AND TESTING**

**TURKEY POINT COL PROJECT
FLORIDA CITY, FLORIDA**

October 6, 2008

VOLUME 1

Prepared By:

**MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina**

MACTEC Project No. 6468-07-1950

Prepared For:

**Bechtel Power Corporation
Subcontract No. 25409-102-HC4-CY00-00001**

Contents

Table of Contents

Data Report Text

Tables

Figures

References

Appendix A – Survey Report

Appendix B – Geotechnical Field Data

**FINAL DATA REPORT
GEOTECHNICAL EXPLORATION AND TESTING
TURKEY POINT COL PROJECT
TABLE OF CONTENTS**

VOLUME 1

Report Text

Section 1	Overview	1
1.1	Introduction	1
1.2	Personnel	2
1.3	Organization of Report	3
1.4	Quality Assurance	4
Section 2	Test Methods	5
2.1	Surveying	5
2.2	Utility Location	5
2.3	Drilling Equipment/Methods	6
2.4	SPT Energy Measurements	8
2.5	Sampling in Geotechnical Borings	9
2.6	Boring Logs	10
2.7	Sampling in Geotechnical Test Pits	12
2.8	Cone Penetrometer Testing	13
2.9	Field Electrical Resistivity Testing	13
2.10	Geophysical Down Hole Testing	13
Section 3	Sample Storage	16
Section 4	Laboratory Testing – Geotechnical	17
4.1	Identification Tests	19
4.2	Compaction and Strength Tests	19
4.3	Shear Strength Tests	19

4.4	Modulus and Damping Tests	19
4.5	Chemical Testing of Soil	19
4.6	Reporting	20
Section 5	Water Sampling, Field and Laboratory Testing	21
5.1	Well Installation	21
5.2	Water Level Measurements	22
5.3	Well Development	22
5.4	Well Purging and Sampling	22
5.5	Laboratory Testing of Groundwater samples	23
5.6	In-Situ Hydraulic Conductivity Testing	25

VOLUME 1

Tables

Table 1.1	Organizations Performing Work at the Site or in the Laboratory
Table 2.1	Testing Summary – Borings, Cone Penetrometer – Test Pits
Table 4.1	Summary of Soil Laboratory Index and Classification Test Results
Table 4.2	Summary of Soil Test Results for Test Pits
Table 4.3	Summary of Laboratory Test Results-Rock
Table 4.4	Summary of Compressive Strength and Elastic Moduli of Intact Rock Core – ASTM D 7012-07
Table 4.5	Summary of Laboratory Test Results-Carbonate Content ASTM D 4373-02
Table 4.6	Summary of Soil Chemical Test Results
Table 4.7	Summary of Soil Strength Test Results
Table 5.1	Summary of Observation Well Data
Table 5.2	Summary of Field Indicator Parameter Measurements
Table 5.3	Summary of Laboratory Test Results - Groundwater Samples
Table 5.4	Summary of In-Situ Hydraulic Conductivity Tests

VOLUME 1

Figures

Figure 1 Site Vicinity Map

References “Drilled Shaft Design and Construction in Florida”
Bill C. McMahan Jr., August 18, 1988

Appendix A Survey Report

Appendix B Geotechnical Field Data

VOLUME 2

Appendix C Cone Penetrometer Test Results

Appendix D Geophysical Test Data

VOLUME 3

Appendix E Laboratory Test Data

E.1 Laboratory Test Data on Soil Samples

E.2 Laboratory Test Data on Rock Cores

VOLUME 4

Appendix F RCTS Data

Appendix G Groundwater Data

SECTION 1 OVERVIEW

1.1 Introduction

MACTEC Engineering and Consulting, Inc. (MACTEC) was retained by Bechtel Power Corporation (Bechtel) to conduct the subsurface investigation and laboratory testing program to obtain information on subsurface materials and conditions for use in the preparation of the Combined Operating License (COL) Application for the FPL – Turkey Point Power Generating Station located in Florida City, Florida. The COL application, to be prepared by others, will be submitted to the U.S. Nuclear Regulatory Commission (NRC) for approval to locate a future nuclear electric power generation facility at the existing Turkey Point Site. A site location map is included as Figure 1.

MACTEC executed its services in accordance with Bechtel Subcontract No.25409-102-HC4-CY00-0001. The field work commenced on February 9, 2008 and drilling activities were substantially completed on May 30, 2008. Geophysical testing was completed on June 26, 2008.

The Scope of Work was defined in Exhibit “D” (current revision 4) of the Bechtel Subcontract and the technical requirements were defined in Bechtel Specification 25409-102-3PS-CY00-00001 Rev 002, dated April 9, 2008. The scope of work is briefly described below:

- Preparing and submitting a Quality Assurance Project Document, Work Plan, Environmental Protection Plan, and Health and Safety Plan.
- Obtaining permits necessary for performing the work.
- Furnishing the supervision, labor, equipment, tools, supplies, and materials necessary to perform the specified work at the locations specified by Bechtel.
- Providing geotechnical engineers and/or geologists in the field under the direction of qualified geotechnical engineers and/or geologists with experience in geotechnical investigations to oversee and log the investigation work.
- Providing a Site Manager responsible for oversight of all required field activities.
- Providing Quality Assurance (QA) observation of the field and laboratory work activities and submitting QA records.
- Locating work items by survey methods.
- Performing utility location survey prior to starting work
- Providing water to work areas for drilling and testing
- Performing Standard Penetration Tests (SPT) and obtaining samples using a split spoon sampler.
- Performing both HQ3 and PQ3 triple tube wire-line rock coring
- Performing SPT energy measurements.
- Obtaining undisturbed samples using standard pushed Shelby tubes, the Pitcher barrel sampler, and the Osterberg sampler.
- Collecting, labeling and transporting soil and rock core samples to a designated sample storage area.
- Transporting designated samples to appropriate laboratories for testing purposes.
- Backfilling drilled holes with cement/bentonite grout using the tremie method.
- Excavating and backfilling test pits and obtaining bulk samples.
- Installing ground water observation wells, performing field permeability tests, and obtaining water samples.

- Performing electrical Cone Penetrometer Tests (CPT) with down-hole seismic tests (if possible) and porewater pressure dissipation tests at selected locations.
- Performing down-hole geophysical logging.
- Performing down-hole acoustic televiewer logging.
- Performing suspension P-S logging.
- Performing down-hole velocity measurements
- Restoring the work areas.
- Performing laboratory testing on soil and rock samples.
- Preparing a Data Report containing the data generated by the subsurface investigation and laboratory testing activities.
- Performing all work under MACTEC's approved Safety Program.
- Performing all work in accordance with MACTEC's approved Environmental Protection Plan

Sampling and testing related to the geotechnical exploration are considered to be tasks that could affect design, construction or operation of safety-related systems, structures and components. This work was performed under a Quality Assurance program that meets the requirements of 10 CRF Part 50 Appendix B and 10 CFR 21 (Reporting of Defects and Noncompliance)

This Final Data Report generally describes the field and laboratory testing methods and presents the field data, and laboratory testing results completed for the site investigation area.

1.2 Personnel

MACTEC completed field work for this project under the direction of Bechtel's Site Coordinators, Mr. Jerry Lefevre, Mr. Linwood Bennett, and Mr. William Holtz. Site technical support was provided by Mr. Mike Klosterman, Mr. John Sturman, and Mr. Allen Shaw.

Primary MACTEC personnel and their responsibilities were as follows:

Stephen J. Criscenzo	Chief Engineer
J. Allan Tice	Senior Principal Engineer
G. Thomas McDaniel, P.E.	Project Principal Engineer
Scott Auger	Project Manager
Siesta Williams	Document Control
John Martin	Quality Assurance Representative
Matthew Cooke	Site Manager, Report Preparation
Daniel Haug	Site Coordinator
Michael Lear	Lead Geologist
Lise Bisson	Rig Geologist
Chris Burroughs	Rig Geologist
Oscar Rodriguez	Rig Engineer
Rodney Clark	Rig Geologist
Harry Lyatuu	Rig Engineer
Johnny Liles	Rig Geologist
Shaun Lehman	Rig Geologist
Stephen Woodham	Rig Engineer
Kimberly Charles-Smith	Principal Environmental Technician
Gautham Pillappa	Rig Engineer
Bryan Taylor	Rig Geologist

Steven E. Kiser, P.E.	SPT Hammer Energy Measurement – Charlotte
Jay Cerceo	SPT Hammer Energy Measurement - Charlotte
Michael Jones, PLS	Site Utility Survey
Mark Follis	Surveyor
Concepcion Barrios	Surveyor
Ananda Fowler	Surveyor
Jerald Johnson	Surveyor
Chris Lindstedt	Surveyor

Lee Brian Johnson	Laboratory Services Manager - Raleigh
Jianren Wang	Laboratory Services Manager - Atlanta
Michael Hamlet	Laboratory Services Manager - Charlotte

Jimmy Schiff	Report Preparation
Jim Howard	Report Preparation
William Grimes	Senior Geologist/Report Preparation
Steven Copley	Report Preparation
Bill Deobald	Report Preparation
Zeynep Ulker	Report Preparation

The organizations that conducted on-site work or laboratory testing of samples as part of this project are listed in Table 1.1.

1.3 Organization of Report

The organization of this report consists of a transmittal letter, table of contents, narrative text, tables, figures and appendices. The appendix documents containing project data submittals are further organized as follows:

Appendix A – Survey Report

Appendix B – Geotechnical Field Data

- Boring and Coring Logs with Core Photographs
- Test Pit Logs
- SPT Energy Measurement Reports

Appendix C – Cone Penetrometer Test Results

- CPT Data
- CPT Report
- CPT Calibration Report

Appendix D – Geophysical Test Data

Appendix E – Laboratory Test Data

- Section E.1 Index and Chemical Test Data Soils (Split Spoon)
- Section E.2 Strength Test Data, Rock (UC and UC with stress strain)

Appendix F – Soil Dynamic Laboratory Test (RCTS) Data

Appendix G – Groundwater Data

- Well Construction Permits
- Observation Well Records
- Well Development Records
- Well Sampling Records
- Laboratory Test Reports
- Slug Test Data

1.4 Quality Assurance

Quality-related activities conducted by MACTEC and its subcontractors during the work presented in this report were in accordance with the MACTEC Quality Assurance Manual and the MACTEC Quality Assurance Project Document. The MACTEC QA program complies with NQA-1 Subpart 2.2 and the requirements of 10 CFR 50 Appendix B.

SECTION 2 TEST METHODS

2.1 Surveying

The surveying in the power block area was conducted in two phases by MACTEC personnel, working under the direct supervision of Mr. Michael Jones, PLS, Land Surveyor, Florida License No. 4201. The first phase was to stake preliminary test locations based on initial coordinates provided by Bechtel, listed on Drawing No. 0-CY-0000-0001 issued for use on January 28, 2008. Later phases of surveying were performed to locate borings presented on subsequent revisions of Bechtel Drawing 0-CY-0000-0001 through Rev. 6, which was issued for use on April 11, 2008. Test locations were located in the field using Real Time Kinematic-Global Positioning Satellite (RTK-GPS) techniques. Wooden stakes tied with flagging and marked with the test-location designator were used to mark the surveyed locations. Prior to the start of testing, some test locations were relocated due to site conditions (water channels, topography) with concurrence of Bechtel personnel. Other borings were located at offsets from the staked location to accommodate additional testing/sampling at a given location, for example geophysical testing. The second phase of surveying was conducted after completion of testing. The surveyors returned to the site and determined as-built locations and ground surface elevations of the actual test locations using RTK-GPS survey techniques.

MACTEC used Trimble GPS System models 5700 and 5800 to locate test locations and collect field data and observations. In addition to the use of National Geodetic Survey control stations, MACTEC established two control points at the site to serve as reference for the surveys. To achieve project accuracy requirements, observations were made on two separate occasions at each test location. The independent observations captured at each test location were subsequently processed through Trimble Office Processing Software to determine final coordinate and elevation values. The field as-built locations were surveyed to establish the horizontal locations to the nearest 0.5 feet and the vertical locations were determined to the nearest 0.1 feet as outlined in the project Engineering Specifications, Section 2.0 Surveying Services.

The as-built survey locations are provided to Bechtel for their use in creating an as-built drawing of the exploration. The as-built survey locations were also used as input to final boring logs and other tables reporting locations. A complete copy of the survey report covering the as-built survey data for the project test locations can be found in Appendix A.

2.2 Utility Location

MACTEC surveyors under the direction of Mr. Michael Jones, PLS of MACTEC used preliminary survey locations and physical features to mark the locations planned for borings, wells, CPT probes and test pits. MACTEC personnel conducted sweeps within a 10-ft radius surrounding each boring location and or boring offset using geophysical induction with a Shond-Stedk Model GA-52CX magnetic locator. The intent was to locate any metallic underground utilities that would pose a risk to drilling personnel. No metallic underground utilities or energized lines were detected in the area of the geotechnical investigation. In addition to the magnetic induction survey, Florida Sunshine One Call was also notified at least one week in advance of drilling activities. Inquiries were made to FPL plant personnel to assist in underground utility locations. No underground utilities were reported in the project site by FPL and Florida Sunshine One Call.

2.3 Drilling Equipment/Methods

MACTEC mobilized the following drilling equipment to the site:

Drill Rig	Driller	Carrier Type	Owner	Hammer Serial Number	Auto Hammer	Rig Use
CME-55 LC	R. Banks	ATV	MACTEC	MEC-02	Yes	SPT, Core
CME-75	T. Warren/J. Warren	Truck	MACTEC	MEC-09	Yes	SPT, Core
CME-550	J. Warren	ATV	MACTEC	MEC-04	Yes	SPT, Core
CME 45c	D. Rhodes	Track	MACTEC	MEC-12	Yes	SPT, Core
CME-550	D. White/F. Cox	Marsh Buggy	MACTEC	893	Yes	SPT, Core, Well Installation
CME-550	L. Carter	ATV	MACTEC	MEC-03	Yes	SPT, Core
CME-55	Phillip Pitts	Marsh Buggy	MACTEC	MEC-425	Yes	SPT, Core, Well Installation
CME-550X	R. Landeros	ATV	MACTEC	MEC-05	Yes	SPT, UD, Core, Well Installation
CME-750	G. Bilbrey	ATV	Miller Drilling	07	Yes	SPT, Core
CME-550	R. White	ATV	Miller Drilling	M06	Yes	SPT, Core
Gus Pech Sonic	M. Martin	Truck	Miller Drilling	NA	No	Well Installation
Fugro CPT	A. Fonseca	Track	Fugro	NA	No	CPT

Each rig also had at least one support truck used to haul materials. Drilling water was provided on site by two water storage tanks fed by FPL on-site potable water utilities located adjacent to the office and support trailers. The drill rig at each boring location was provided drilling water using a flexible PVC pipe and rolled plastic tubing connected to the water storage tanks. Where boring locations were remote, a Marooka ATV water buggy was utilized to haul water to ATV drill rigs. Two water trucks were also used to haul and pump water to drill rigs.

Due to the soft surface soil conditions, access by the site drilling equipment and support vehicles to the soil boring locations was provided by constructing a geotextile reinforced, crushed limestone gravel roadway along the center line of the power block. Access to boring locations away from the gravel road was provided by laying timber mats to create a temporary roadway. The mats were removed after completion of each boring and re-used to construct other access roadways. The mats were moved using rough terrain fork lifts. Borings B-638, B-803 and B-804 were deleted from the program due to inaccessible conditions.

A Caterpillar D-6 bulldozer was used to smooth the ground at several boring locations and to maintain the gravel roadway.

Borings were generally advanced from the ground surface using mud rotary drilling techniques until encountering SPT refusal (defined as 50 blows for 0.5 feet or less of penetration) or to an approximate depth of 35 feet, whichever occurred first. SPT soil samples from the geotechnical borings were obtained at approximate 2.5-foot, 5-foot, and 10-foot intervals as described in Section 2.5.1. Once SPT refusal was encountered or an approximate depth of 35 feet was reached, a steel casing was set, and the holes were advanced using triple tube wire-line rock coring equipment and procedures described in ASTM D 2113. Rock coring was accomplished utilizing “HQ3” or “PQ3” sized core barrels with split inner-barrel liners. Additional SPT samples were collected between core runs (in zones of poor rock recovery) by advancement through the outer core barrel with the inner barrel removed. Three, four, and/or six-inch-diameter casings were used to stabilize the upper portions of borings as necessary. Multiple sized casings were typically set in borings advanced more than 100 feet below ground surface. Borings were advanced to a predetermined termination depth. All rigs utilized on this project for the collection of standard penetration testing (SPT) soil samples used automatic hammers. A summary of boring information is presented in Table 2.1. Geotechnical field data including boring logs, coring logs, core photographs, and test pit logs are included in Appendix B.

Ground water levels at the site are artificially maintained by variation of the water levels in the FPL cooling water canals which surround the investigation site. The groundwater levels at the borings locations were monitored during drilling operations and were generally near or above the existing ground surface. Due to the use of drilling fluid additives, the groundwater conditions observed in the geotechnical borings may not truly reflect the groundwater conditions at the project site.

Circulation of drill fluids was typically lost at the start of coring operations due to the porosity of the limestone formations encountered at the site. As a result large amounts of water were used to complete the borings. In borings that terminated at depths below the limestone units, circulation of drill fluids was typically regained by advancing steel casing through the limestone formations. Standard bentonite based drilling additives were used in borings not associated with observation well clusters. In geotechnical borings associated with observation wells, biodegradable drilling fluid additives such as “Revert” were used to complete the borings. Drilling fluid additives were used during rock coring procedures to reduce vibration of the drill tools and to prevent sand-locking of the core barrel due to the loss of circulation.

In borings where SPT measurements were collected, only side discharge type bits were used. Bit size varied depending on rod diameter, sampling type and depth. Flush jointed A-rods (AW, and AWJ) were used for any SPT boring that was advanced to less than 200 feet below ground surface (bgs). Flush jointed NWJ-rods, were used (from ground surface to the total depth of the boring) for any SPT boring that was advanced deeper than 200 feet bgs.

At selected locations and following review of the adjacent geotechnical boring by MACTEC and Bechtel, observation wells were installed by rotary wash drilling methods, rotasonic drilling methods, or in PQ3 size core holes. The borings were performed in accordance with section 5.1 of the Bechtel Specification. Each well consisted of PVC screen and riser pipe, steel centralizers, sand filter pack, bentonite chips or pellets and cement/bentonite grout. Protective metal well covers and concrete pads were placed at the surface. The well covers were painted with yellow rust preventative paint. Well screen intervals were assigned by Bechtel.

Cone penetration testing (CPT) was conducted by Fugro Consultants, Inc., a subcontractor to MACTEC. Fugro used a purpose-built approximate 20-ton capacity track-mounted cone penetration unit to complete the work. Each probe was advanced beginning at a depth of about

120 feet to the assigned termination depth or to cone refusal, which was the limit of the pushing capacity of the rig. CPT borings were advanced through HQ3-size core holes predrilled through the upper limestone layers as described in Section 2.8. At one location, an ATV drill rig was used to advance casing through hard zones, allowing the CPT to be performed to a depth of approximately 290 feet. Pore pressure dissipation testing was completed in selected CPT's at intervals determined by Bechtel.

The borings and the CPT probe locations were filled using a cement-bentonite grout prior to demobilizing from the site. The borings were grouted from the bottom of the boring by pumping the grout through a tremie pipe. A grout mixture was used to backfill the borings per Section 4.3 of the Specification. A stake or other marker was placed at each completed boring location for later survey use. Due to the porosity of the limestone formations we experienced severe loss of grout in to the formations. After discussion with Bechtel, the borehole abandonment procedure was modified through SDDR-12 to place a maximum of two grout volumes, allow the grout to set, fill the remaining open hole with bentonite chips to within a few feet of the ground surface, and then place grout until flush with the existing grade.

2.4 SPT Energy Measurements

SPT energy measurements were conducted for each of the drill rigs performing SPT soil sampling. Energy measurements were recorded during SPT sampling at the depth intervals shown on the SPT Energy Measurement reports in Appendix B. The length of the drill rod string, including the instrumented drill rod insert for each sample was generally 4 feet longer than the depth of the sample being collected.

The energy measurements were performed with a Pile Driving Analyzer (PDA) model PAK and calibrated accelerometers and strain gages. A section of drill rod two feet long and the same size as the drill rod used to advance the boring and instrumented with dedicated strain gages, was inserted at the top of the drill rod string immediately below the SPT automatic hammer. The inserted rod was also instrumented with two piezoresistive accelerometers that were bolted to the outside of the rod.

The work was conducted in general accordance with ASTM D 4633-05. The strain and acceleration signals were converted to force and velocity by the PDA, and the data was interpreted by the PDA according to the Case Method equation. The EFV method of energy calculation is recommended in ASTM Standard D 4633-05. The maximum energy transmitted to the drill rod string (as measured at the location of the strain gages and accelerometers) was calculated by the PDA using the EFV method equation, as shown below:

$$EFV = \int F(t) * V(t) * dt$$

Where: EFV = Transferred energy (EFV equation), or Energy of FV

F(t) = Calculated force at time t

V(t) = Calculated velocity at time t

dt = time differential (integral taken with respect to time)

The EFV equation, integrated over the complete wave event, measures the total energy content of the event using both force and velocity measurements. The EFV values associated with each blow were tabulated and averaged to obtain the average measured energy at each depth tested. The ratio of the average measured energy to the theoretical potential energy of the SPT system (140 lb weight with the specified 30 inch fall) is the energy transfer ratio (ETR).

The average ETR measured for each rig used at the site ranged from 79.6% to 88.6% of the theoretical potential energy. These ETR values are within the range of typical values for automatic hammers. The ETR values (as percent of the theoretical value) are shown in Appendix B.

2.5 Sampling in Geotechnical Borings

2.5.1 Standard Penetration Test Sampling

SPT sampling in the geotechnical borings was generally conducted at 2.5-foot intervals from the ground surface to a depth of 15 feet. The SPT sampling interval below 15 feet was five feet to a depth of 100 feet. The SPT sampling interval below 100 feet was 10 feet. The equipment and methods used were in accordance with ASTM D 1586-99. The split barrel sampler was typically driven 1.5 feet in soil, with blows recorded for each 0.5-foot interval of penetration. The weight of the hammers used at the site ranged from 138.1 to 139.6 pounds, meeting the ASTM requirements. In very hard soils, driving was terminated after 50 blows were recorded for a 0.5-foot, or less, interval and the actual penetration recorded, (e.g., 50 blows / 0.3 feet). At selected locations where low penetration was encountered, the sampler was over-driven in attempt to collect additional sample.

The split barrel sampler was opened at the drill site and the recovered materials were visually described, classified, and photographed by MACTEC's rig geologist or engineer. A selected portion of the sample (typically the lower portion of the sample) was placed in a glass sample jar with a vapor-seal screw lid. In general, when more than one type of material was found in a sample, representative samples of each material were placed in separate jars and appropriately marked. Sample jars were labeled, placed in cardboard boxes, and transported to the on-site secure storage trailer at the end of each work day.

2.5.2 Rock Core Sampling

Rock coring in the geotechnical borings was generally conducted upon SPT refusal (50 blows for 0.5-feet or less of penetration) or when the boring reached an approximate depth of 35 feet. Rock recovered by the coring process, which was done according to ASTM D 2113-99, was carefully removed from the inner barrel and visually described by the rig geologist/engineer while in the split inner barrel liner. At that time the core recovery and Rock Quality Designation (RQD) were measured and the percent core recovery and RQD were calculated. Mechanical breaks were distinguished from natural breaks where possible. The core was photographed while in the split liner and then placed in appropriately marked wooden core boxes. The rock core was wrapped in 2-mil PVC plastic upon placement in the wooden core boxes, as recommended in ASTM D 5079, section 7.5.1 *Routine Care*, to preserve the moisture content of the rock core. The rig geologist/engineer placed foam spacers in the core box to stabilize the core laterally and wooden blocks were used to mark the ends of runs as needed. In-progress and completed core boxes were transported to the on-site secure storage trailers at the end of each work day.

Rock core samples from borings completed prior to or in progress during the NRC site visit, conducted February 26-27, 2008, were not wrapped in plastic. It was determined during the NRC's visit that measures described in ASTM D 5079, section 7.5.1, should be followed to preserve the moisture condition of the rock core.

Digital color photographs of the completed core boxes were taken at the site storage trailers, prior to removal of any core samples for potential testing. The core was wetted with a light water spray and a suitable scale was included in the photographs. After core photography was completed, selected samples from each core box were removed for potential laboratory testing. These samples were trimmed on site with a power rock saw, labeled, photographed, wrapped in vinylidene chloride plastic (saran wrap) and then wrapped in aluminum foil, and then coated with plastic microcrystalline wax as specified in ASTM D 5079 section 7.5.2 *Special Care*. The trimmed ends of the prepared samples were returned to their original position in the wooden core boxes and a piece of foam was placed where the rock core had been removed and noted as such. An inventory list of prepared samples was maintained at the site and provided to Bechtel for potential laboratory testing assignment.

2.5.3 Undisturbed Soil Sampling

Undisturbed soil samples were obtained from one borehole (B-630, as directed by Bechtel), in general accordance with ASTM D-1587, using standard pushed Shelby Tubes, Osterberg sampler, and Pitcher barrel sampler (USACE EM 1110-1-1804). The sampling method used at each interval was selected based on the subsurface conditions encountered during drilling in an effort to maximize sample quality and recovery.

A Pitcher barrel sampler was used for collection of undisturbed soil samples at depth intervals selected by Bechtel or when subsurface material was anticipated to be too dense or hard to allow satisfactory samples to be recovered by pushing the Shelby tube sampler. The Pitcher barrel sampler is a rotary sampler that drills the 3-inch diameter tube into the subsurface material.

The Osterberg tube sampler was used for collection of undisturbed soil samples at depth intervals when the subsurface material was anticipated to be very soft or loose. The Osterberg sampler is a hydraulically activated fixed piston sampler.

Any samples that were damaged were retained, capped and were noted as possibly disturbed samples. The undisturbed and disturbed samples were sealed at the top and bottom against moisture loss, labeled, and kept in an upright condition. Disturbed and undisturbed soil samples were transported to the climate-controlled on-site storage trailer following ASTM D 4220-95(2000) and stored vertically in specially prepared racks.

2.6 Boring Logs

The soil descriptions on the boring logs in Appendix B are based on the field descriptions (ASTM D 2488-00) by the rig geologist or engineer, modified according to ASTM D 2487-00 where lab test results are available. The rock core descriptions on the boring logs in Appendix B are based on the rig geologist's/engineer's description. The carbonate rock encountered at the site was classified according to Dunham's Classification of Carbonate Rocks (Dunham, R. J., 1962, *Classification of Carbonate Rocks According to Depositional Texture: in Classification of Carbonate Rocks: A Symposium*; Ham, W. E., ed.: American Association of Petroleum Geologists Memoir 1, p. 108-121).

For these sedimentary rocks, both hardness and induration were described by the rig geologist. The hardness descriptions were based on difficulty of breaking core pieces by manual or hammer means and are consistent with publications by the U. S. Army, U. S. Bureau of Reclamation and the text "Characteristics of Geologic Materials and Formations, A Field Guide for Geotechnical Engineers" by Hunt (CRC Press, 2006). Where SPT sampling was used in rock formations

(because the rock was not sufficiently intact for standard coring methods), the hardness of the samples was described based on the SPT N-value. The N-value to hardness correlation was obtained from a published paper titled “ Drilled Shaft Design and Construction in Florida” prepared by Bill C. McMahan, Jr., Independent Studies Project, University of Florida, dated August 18, 1988. A copy of the paper is located in Volume 1, in the Reference Section.

The boring logs in Appendix B were prepared using Version 8 of the computer program “gINT”. On the boring logs, the strata breaks were delineated by a solid line where the changes between strata were distinctly visible in samples or based on drilling conditions and driller’s feedback. A dashed line was used to infer a strata break in the zone between samples.

The geologic formations encountered in this geotechnical exploration were identified. In the project area, the geologic subsurface formations encountered from the surface include:

- Recent calcareous silts with varying levels of organic content locally referred to as “**Muck**” - When wet, this soil is soft to very soft and is generally considered to be unsuitable for construction. This layer was encountered from the surface to depths of typically three to five feet. The surface elevations for this strata ranged from 0.2 to -1.8 feet North American Vertical Datum of 1988 (NAVD88). The surface groundwater consists of sea water and its level was at or slightly above the ground surface elevation at time of drilling.
- **Miami Formation** – At the site, the Miami Formation is overlain by the organic calcareous silt (muck) layer except where the organic silt layer had been removed and replaced by granular fill for roadway access or overlain by canal excavation spoil materials. The Miami Formation is generally described as white, porous, sometimes sandy, fossiliferous, oolitic limestone (boundstone), locally cross-bedded and typically with locally interconnected vugs in-filled with overlying soils. The formation is mostly soft to medium hard throughout, but typically very hard at the base. The top of the Miami Formation was generally encountered between elevation -3 and -6 feet NAVD88. The Miami Formation is directly underlain by the Fort Thompson Formation.

The formation was sampled by both Standard Penetration Testing (SPT) in its upper portions and rock coring near the base of the formation. The SPT samples generally were returned as silt-, sand-, and gravel-sized fragments broken from rock by the split-barrel sampler. The samples were interpreted as, and described as, a rock formation on the boring logs rather than as a granular material because, as observed in test pits, in the ground the formation appears as an intact mass. The rock hardness description was interpreted from the SPT “N” values as discussed previously in order to provide the limestone with a rock hardness description instead of the soil relative density designations.

- **Fort Thompson Formation** – The Fort Thompson Formation directly underlies the Miami Formation and the contact between these two formations is generally irregular. The Fort Thompson Formation is generally a more massive limestone (boundstone) than the Miami Formation. Its composition is variable, including the skeletal remains of coral, small solution cavities with translucent amber-colored re-crystallized calcite infill, fine grained fresh water limestone, sandy limestone with quartz sand interbeds, and shell molds and casts. These lithologies may alternate abruptly in thickness and lateral extent.

For the purpose of this report, the Fort Thompson Formation is divided into an Upper and Lower unit. The Upper Fort Thompson is generally coralline. The Lower Fort Thompson is generally a sandy limestone with uncemented sand interbeds and shell molds and casts. The contact between the Upper and Lower units of the formation has been identified for this study to be a layer of dark gray limestone having the characteristics of the Upper Fort Thompson that is generally up to 2 feet thick and is underlain by, typically, sandy limestone with shell molds and casts. The dark gray coloration was used as a marker for the base of the Upper unit. MACTEC did not subdivide the Fort Thompson into Upper and Lower units for borings where the marker was not discernible. The top of the Upper Fort Thompson Formation was generally encountered between elevation -23 and -33 feet NAVD88. The top of the Lower Fort Thompson was generally encountered between elevation -48 and -52 feet NAVD88. The Lower Fort Thompson Formation is directly underlain by the Tamiami Formation.

In zones of poor rock core recovery, the Fort Thompson Formation was occasionally sampled using the SPT. The SPT samples of this formation were returned as silt-, sand- and gravel-sized fragments broken from rock by the split-barrel sampler. The samples were interpreted as and described as a rock formation on the boring logs, rather than as a granular material. The rock hardness description was determined from the SPT “N” values as described in the discussion on the Miami Formation in order to provide the limestone with a rock hardness description instead of the soil relative density designations.

- **Tamiami Formation** – The Tamiami directly underlies the Lower Fort Thompson Formation. The Tamiami Formation generally consists of poorly graded and silty sand, locally with interlayered clayey sand, silt and lean clay. The top of the Tamiami Formation was generally encountered between elevation -113 and -117 feet NAVD88.
- **Hawthorn Group** – The Hawthorn Group directly underlies the Tamiami Formation. The top of the Hawthorn Group was generally encountered between elevation -215 and -224 feet NAVD88. The top of the Hawthorn Group is characterized by a “spike” in Gamma activity observed in the geophysical logs for the borings that were advanced deeper than 220 feet. The Gamma spike is likely related to the increase in phosphatic material associated with the Hawthorn Group. The Hawthorn was penetrated in only the deepest borings drilled for the project, B-601(DH), B-608(DH), B-610(DH), B-630, B-701(DH), B-708, and B710(DH). The Hawthorn generally consists of poorly graded and silty sand to about elevation -460 feet NAVD88, then changes to dolostone and limestone.

2.7 Sampling in Geotechnical Test Pits

Test pits were excavated using a rubber-tired backhoe at two locations identified by Bechtel. The Bechtel field representative selected the materials to be sampled. A MACTEC rig geologist collected the bulk samples. As approved by Bechtel, the bulk samples were placed in new 5-gallon plastic buckets with handles for carrying. Approximately ten buckets of each sampled material were obtained. Small portions of the samples were placed in glass jars and sealed for moisture retention. The backhoe was used to backfill the test pits using the excavated materials. The backfilled materials were placed into the excavation in the order in which they were removed, and tamped in-place using the backhoe. The rig geologist placed a stake at the test pit location for later survey location.

The buckets and jar samples were labeled and transported to the on-site storage area. The rig geologist prepared a Geotechnical Test Pit Log based on visual description of the excavated materials according to ASTM D 2488-06. The surveyed locations of the test pits are included in Appendix A. The Geotechnical Test Pit Logs are included in Appendix B.

2.8 Cone Penetrometer Testing

Cone Penetrometer Tests (CPT) were performed at four locations on the site. At location C-602, the initial attempt to perform the CPT was not successful due to equipment problems; the location was moved approximately 6 feet and reperformed as C-602A. This location was also used later for geophysical downhole velocity testing and identified for that purpose as B-640DHT.

The CPT tests were conducted using 15 cm² piezocones or seismic cones with the piezo transducer mounted in the U2 position (between the tip and sleeve). The specified probe depth was to 280 feet or to refusal. MACTEC utilized drill rigs to core and advance casing through the hard limestone formations to a depth of approximately 120 feet. CPT testing began at an approximate depth of 120 feet and extended to refusal depths of approximately 220 feet.

At location C-701, an ATV drill rig was used to advance casing through zones of CPT refusal. A multiple stage CPT sounding was performed to a depth of approximately 290 feet at this location. Seismic shear wave testing was attempted during the first CPT sounding at C-702. Due to the soft surficial muck layer, seismic shear wave testing was determined to not be feasible with the CPT rig. At depths designated by Bechtel in the four CPT borings, pore pressure dissipation measurements were performed at 24 locations. In our review of the CPT data, we noted that six of the pore pressure dissipations tests showed a continued increasing pore pressure rather than a dissipation. This could possibly have been caused by the drill rig continuing to apply load to the CPT rods due to settlement of the drill rig or its support mat in the soft surface soils. Results for all CPT testing are included in Appendix C.

2.9 Field Electrical Resistivity Testing

Field electrical testing was not assigned.

2.10 Geophysical Down-hole Testing

The geophysical down-hole testing was performed by GEOVision, the geophysical subcontractor. The results of the testing are presented in the GeoVision Report in Appendix D. The tests are briefly described below.

Down-hole geophysical testing and logging was performed in twelve borings in the power block area, including B-601(DH), B-604(DH), B-608(DH), B-610(DH), B-620(DH), B-640DHT, B-701(DH), B-704G(DH), B-708(DH), B-710G(DH), B-720G(DH), and B-740DHT. Borings designated as "G", for example "B-704G(DH)", were offset borings drilled adjacent the original staked geotechnical boring for geophysical testing. The suite of tests listed below was performed in each boring in accordance with the procedures listed below. Borings B-640DHT and B-740DHT were used only for downhole velocity testing. The location designated B-640DHT was the same location as earlier used for CPT testing designated as C-602A.

2.10.1 Natural Gamma (ASTM D 6274-98(04))

Gamma logs record the amount of natural gamma radiation emitted by the soil and rocks surrounding the boring. Natural gamma was recorded using two probes - one combined with the three arm caliper and one combined with the electrical logging tool. The dual measurements provided a quality check. The natural gamma data are qualitative and provide assistance in identifying strata changes.

2.10.2 Long and Short Normal Resistivity/Spontaneous Potential (ASTM D 5753-05)

Normal-resistivity logs record the electrical resistivity of the borehole environment and surrounding soil and water as measured by variably spaced potential electrodes on the logging probe. Spacing for potential electrodes is 16 inches for short-normal resistivity and 64 inches for long normal resistivity. Normal resistivity logs are affected by bed thickness, borehole diameter and borehole fluid, and can only be collected in water or mud filled open holes.

2.10.3 Three Arm Caliper (ASTM D 6167-97(04))

Caliper logs record borehole diameter with depth. Changes in borehole diameter are related to boring construction, such as casing or drilling bit size, and to fracturing or caving along the borehole wall. Because borehole diameter commonly affects log response, the caliper log can be useful in the analysis of other geophysical logs. Caliper with gamma logging is used to assist in the identification of strata changes.

2.10.4 Borehole Acoustic Televierer Logging

Televierer logging was conducted in accordance with GEOVison Procedure for using the Roberson Geologging Hi-Resolution Acoustic Televierer (HIRAT) (Revision 1.0, dated 2/10/06) as included in the MACTEC Work Plan. The acoustic televierer also determines bore-hole inclination and deviation from vertical by measuring amplitude and travel time of the reflected acoustic signal and produces a magnetically oriented photographic image of the acoustic reflectivity of the boring wall.

2.10.5 Suspension P-S Velocity Logging

Suspension P-S velocity logging was conducted in accordance with GEOVision procedure for OYO P-S Suspension Seismic Velocity Logging, Rev. 1.31) as contained in the MACTEC Work Plan. Measurements of compression (P) and shear (S) wave velocity were made at 1.6-foot intervals.

2.10.6 Downhole Velocity Logging

Downhole velocity logging to measure shear wave velocity was performed in B-640DHT and B-740DHT using methods described in GeoVision Procedure for Downhole Seismic Velocity Logging, Revision 1.1 which was approved by MACTEC and Bechtel as part of the MACTEC Downhole Velocity Logging Work Plan. The tests were performed to provide a second method of shear wave velocity measurement to compare to the P-S suspension logging. Logging was planned to be done to 150 feet below ground surface; however, in B-640DHT, curvature of the

installed casing prevented passage of the probe beyond about 125 feet. The lesser depth was acceptable.

Downhole velocity testing is conducted in a borehole that has PVC casing installed with a grouted annulus. The PVC casing is pumped to remove water. An energy source is placed at the surface and a single receiver travels down the the cased borehole at 5-foot intervals. Energy from the source is transmitted down the soil/rock column from the surface to the receiver. Velocities are calculated from the first arrival travel time and depths. Results are presented as vertical profiles of velocity.

SECTION 3 SAMPLE STORAGE

Consistent with MACTEC's QAPD requirements, two on-site sample storage facilities were established. The sample storage facilities were lockable, temperature-controlled, sample storage trailers. The trailers were 40-foot long by 8-foot wide Mobile-Mini Open Bay Security Offices with high security door system and exterior security bars over each window. Racks were assembled to provide secure storage of undisturbed samples. The trailers were supported on timber cribbing and provided with hurricane tie down anchors. Electrical power was supplied to the site storage and office trailers by a diesel generator.

The sample storage trailers were provided with alarm systems which automatically telephoned selected MACTEC personnel who could respond if the temperature control systems failed or if electrical power was lost. This prevented the loss of temperature control in the trailers during periods when MACTEC personnel were not on site.

Samples were transported daily from the field to the sample storage trailers by the rig geologists/engineers and drill crews. The SPT and bulk samples were transported in accordance with ASTM D 4220-95(2000), for Group B samples. The SPT samples were transported in their compartmentalized cardboard box, each labeled to show the contents therein. The bulk test pit samples were sealed in 5-gallon plastic buckets. The UD samples were handled as Group C samples under ASTM D 4220-95(2000). The UD samples were sealed and stored vertically in specially fabricated UD sample racks. The rock cores were transported in accordance with ASTM D 5079-02, in their wooden core boxes, kept horizontal, and each labeled to show the contents. Rock core samples prepared for potential laboratory testing were stored in appropriately labeled wooden core boxes and stacked separately from the geotechnical boring core boxes.

A sample inventory log was kept at the sample storage facility. All samples entering the storage facility were logged in by the rig geologist/engineer or lead geologist. A chain-of-custody form was completed for samples removed from the facility.

The custody of the samples remaining on site was turned over to FPL for long term storage at the completion of our geotechnical exploration services. The transfer of custody of these remaining samples occurred during the period of June 24, 2008 through July 2, 2008. An FPL Chain-of-Custody form was completed for the samples removed from MACTEC's on-site sample storage facilities. FPL was provided with a copy of the sample inventory log which indicates that the samples were transferred to FPL for long term storage.

SECTION 4 LABORATORY TESTING – GEOTECHNICAL

Soil laboratory testing was conducted on approximately 178 disturbed (split-spoon), seven undisturbed (tube) and two bulk samples (from test pits) obtained during the subsurface investigation. In addition 88 selected rock core samples were tested for unconfined compressive strength, and two of these were tested with stress-strain measurements. The testing was performed in accordance with the current ASTM standards or other standards where applicable. The samples to be tested and the tests to be performed were selected by Bechtel engineers. The original assignment sheet was supplemented with additional tests as the investigation progressed. The added tests were written in red ink to distinguish them from previously assigned tests. Updated versions of the Assignment sheet were issued on the dates listed below.

- Geotechnical Lab Test Assignment No. 1 – 2/29/08
- Geotechnical Lab Test Assignment No. 2 – 3/13/08
- Geotechnical Lab Test Assignment No. 3 – 3/25/08
- Geotechnical Lab Test Assignment No. 4 – 4/11/08
- Geotechnical Lab Test Assignment No. 5 – 4/24/08
- Geotechnical Lab Test Assignment No. 6 – 5/2/08
- Geotechnical Lab Test Assignment No. 7 – 5/5/08
- Geotechnical Lab Test Assignment No. 8 – 5/8/08
- Geotechnical Lab Test Assignment No. 9 – 5/15/08
- Geotechnical Lab Test Assignment No. 11 – 5/19/08
- Geotechnical Lab Test Assignment No. 12 – 5/20/08
- Geotechnical Lab Test Assignment No. 10 – 5/23/08
- Geotechnical Lab Test Assignment No. 13 – 6/30/08
- Geotechnical Lab Test Assignment No. 14 – 8/8/08

Samples assigned for laboratory testing were removed from the site secure storage area, and their removal was documented on the sample inventory lists. Chains of Custody were completed by the persons removing the samples. The SPT and bulk samples were packaged and transported via commercial carrier following ASTM D 4220-95(2000) methods for Group B samples. The UD samples were transported in vertical racks by MACTEC personnel in a cushioned van or truck following methods in ASTM D 4220-95(2000) for Group C samples. The Special Care rock core samples were carefully packed into sturdy transport containers, placed in cushioned vans or trucks and transported by MACTEC personnel following guidance in ASTM D 5079-02.

Testing of soil specimens was contingent upon the receipt of soil samples, laboratory assignment sheets and authorization for testing. In some cases commencement of testing was deferred until all three of these items were received by the laboratory performing the test.

Occasionally, the quantity of material was insufficient to perform the assigned testing. These occurrences were brought to the attention of Bechtel, and either a replacement sample was assigned, or the testing was cancelled altogether.

Because of the generally weak character of the rock, preparation of the rock cores for unconfined compressive strength testing required special considerations. After discussions with Bechtel, it was agreed through SDDR 29 that attempting to trim ends and sides to meet the dimensional tolerance requirements of ASTM D 4543-08 would have a high potential risk of sample damage.

The rock cores were trimmed to length and then capped for testing. The actual dimensions were recorded on lab test forms.

Also, because of the fragility of the rock and the porosity of the limestone, attaching strain gages for determination of stress-strain characteristics was not possible for most samples. Of the 88 samples tested, only two samples were found acceptable for strain gage attachment. Strength test results for rock cores are presented in Appendix E.2.

Except as described in following paragraphs, the laboratory testing was conducted in MACTEC's laboratories in Raleigh, North Carolina, Charlotte, North Carolina and Atlanta, Georgia; Soil index tests were conducted in the Raleigh lab, carbonate content tests were performed in the Atlanta lab and rock strength tests were conducted in the Charlotte lab.

Chemical testing for pH, sulfates and chlorides on selected soil samples was done by Test-America in Earth City, Missouri, a subcontractor to MACTEC. In all, 15 soil samples were identified by Bechtel engineers for soil chemical testing and a portion of each jar sample was divided and submitted to TestAmerica for moisture content, pH, sulfate and chloride testing.

Resonant Column Torsional Shear (RCTS) testing of seven selected undisturbed soil samples from B-630 was conducted by Fugro Consultants, Inc. in Houston, Texas (subcontractor to MACTEC) under the technical direction of Dr. K.H. Stokoe of the University of Texas. Undisturbed sample tubes were X-rayed prior to testing.

Consolidated undrained (CU) Triaxial Shear testing of an undisturbed soil sample from Boring B-630 was also performed by Fugro Consultants, Inc. in Houston, Texas.

In order to evaluate the effect of compaction energy on the near surface Miami Formation, particle size distribution tests were performed on samples in the following conditions:

1. As obtained from the test pit excavations for TP-701 and TP-601
2. As prepared for ASTM D 1557-07, but before compaction testing
3. After ASTM D 1557-07 compaction testing

The results indicate that there was some crushing of the material due to the compaction effort. The results of the particle size distribution tests are presented in Appendix E.1

MACTEC transported specified soil and rock core samples selected by Bechtel for Kd testing to the MACTEC Raleigh Office laboratory. The Raleigh laboratory prepared the samples for shipment to Argonne laboratories, Inc. by crushing and sieving the samples to obtain the required weight of material having the specified grain sizes (1cm and 1mm). The prepared samples were shipped to Argonne Laboratories for Kd Testing. The Kd testing performed by Argonne Laboratories was performed for Bechtel and is not provided in this report.

The tests that were assigned and performed, identified by their ASTM standard or other procedure, are shown in the following sections.

4.1 Identification Tests

- Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass - ASTM D 2216-05
- Specific Gravity of Soil Solids by Water Pycnometer - ASTM D 854-06
- Particle-Size Analysis of Soils - ASTM D 422-63 (2002)e1 (for analysis including hydrometer)
- Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis - ASTM D 6913- (2004)e1 (for analysis not including hydrometer)
- Liquid Limit, Plastic Limit, and Plasticity Index of Soils - ASTM D 4318-05
- Moisture, Ash, and Organic Matter of Peat and Other Organic Soils - ASTM D 2974-07a
- Unit Weight (sections 5.7-5.9, 8.1 and 11.3.2 of ASTM D 5084-03)
- Classification of Soils for Engineering Purposes (Unified Soil Classification System) – ASTM D 2487-06
- Description and Identification of Soils (Visual-Manual Procedure) – ASTM D 2488-06
- Rapid Determination of Carbonate Content of Soils – ASTM D 4373-02

Note that grain size distribution data for specimens tested in accordance with ASTM D 6913-2004 are reported to the nearest whole number whereas those with assigned hydrometer tests performed in accordance with ASTM D 422-63 are reported to one decimal place.

4.2 Compaction and Strength Tests

- Laboratory Compaction Characteristics of Soil Using Modified Effort – ASTM D 1557-07
- CBR (California Bearing Ratio) of Laboratory-Compacted Soils - ASTM D 1883-05
- LBR (Florida Lime Rock Bearing Ratio) of Laboratory-Compacted Soils –Florida Method FM-5-515

4.3 Shear Strength Tests

- Unconfined Compressive Strength Testing of Intact Rock Core Samples- ASTM D 7012-07
- Consolidated Undrained Triaxial Shear Testing of Undisturbed Soil Samples – ASTM D 4767-04

4.4 Modulus and Damping Tests (Resonant Column/Torsional Shear [RCTS])

- Test Procedures and Calibration Documentation Associated with the RCTS and URC Tests at the University of Texas at Austin, DCN: UTSD RCTS GR06-4, April 25, 2006, Geotechnical Engineering Center, University of Texas, Austin, Texas.

4.5 Chemical Testing of Soil

- pH – EPA Standard SW 846 9045D
- Chloride- EPA Standard SW 846 9056 / EPA Method 300.0 (EPA-600/4-79-020)
- Sulfate- EPA Standard SW 846 8056 / EPA Method 300.0 (EPA-600/4-79-020)

4.6 Reporting

Except for the RCTS tests, the geotechnical laboratory test reports, consisting of individual test data and results sheets as required by the testing standard, are contained in Appendix E. Summaries of the test results are shown in Tables 4.1 through 4.3. Appendix E, Section E.1 contains the results of laboratory testing on soil samples. Appendix E, Section E.2 contains the results of laboratory testing on rock samples.

The RCTS tests, including the data and documentation of review and approval by Dr. K. H. Stokoe, are presented in Appendix F. The presentation of the reports by Fugro assigned Appendix labels A through G to the test reports.

SECTION 5 WATER SAMPLING, FIELD AND LABORATORY TESTING

5.1 Well Installation

MACTEC and MACTEC's subcontractor, Miller Drilling, installed ten observation well pairs within the power block and surrounding areas of the site as part of this project. Prior to initiating drilling activities for the observation wells, MACTEC submitted a State of Florida Permit Application to Construct a Well for each of the observation wells and received approval to construct these wells. Copies of the approved permits are included in Appendix G. Each well pair consisted of an observation well screened in the Miami Formation (well identification contains the suffix "U") and an observation well screened near the base of the Fort Thompson Formation (well identification contains the suffix "L"). MACTEC installed two, deep monitoring wells (OW-606-D and OW-706-D) which were screened below the Fort Thompson Formation in the Tamiami Formation. All observation wells were installed per the applicable portions of Sections 5.2 and 5.3 of the Bechtel Specification, and all well installation activities were completed under the supervision of Mr. Phillip Pitts, a licensed water-well driller in the State of Florida (License No. 11035). A total of 22 observation wells were installed during this project. The well-construction details are shown in Observation Well Installation Records in Appendix G. Pertinent information for the observation wells installed at the site is shown in Table 5.1.

The observation well depths and screen intervals were specified by Bechtel's hydrogeologist after review of adjacent borehole records, and geophysical logs where appropriate. Borings for the observation wells were advanced using mud rotary drilling techniques with a nominal 6-inch outside diameter, PQ3 wireline coring techniques with a nominal 5-inch outside diameter, and roto sonic techniques with a nominal 7-inch outside diameter. The drilling contractor used "Revert", a biodegradable drilling fluid additive, during borehole advancement for the observation wells and the associated geotechnical borings at each well cluster. MACTEC did not collect soil samples from the boreholes for the wells because these boreholes were adjacent to geotechnical borings, from which samples were collected.

Borehole depths shown on the borehole logs indicate the total depth drilled and sampled. Due to small amounts of drill spoil at the base of the drill bit, or due to the sampler advancing beyond the augered depth, the total depth shown on the borehole log may be slightly greater than the well depth reported on the companion well installation record.

Upon reaching the designated depth for a well, machine-slotted PVC casing connected to solid PVC was set, and a 12/20 silica sand pack and bentonite seal were placed in the wells. A cement/bentonite grout mixture was emplaced from the top of the bentonite seal to the ground surface in each borehole by the tremie method. The drilling contractor used the grout mix specified in Section 4.13 of the Specification.

After well installation activities were completed, MACTEC surveyors determined the location, the elevation of the marked top-of-well-casing, and the elevation of the concrete pad installed around the well. These data are included on the well installation records. The water-depth measurements are referenced to the marked point on top of the PVC casing. The survey data was also used along with measurements of the well sections to calculate elevations for the various components of the observations wells (bentonite seal, filter pack, screened interval, etc.).

The wells were capped with a lockable steel well cover extending approximately three feet above grade. A concrete pad, approximately two feet square and six inches thick, was installed around each well cover per Section 5.3.5 of the Bechtel Specification.

5.2 Water-Level Measurements

MACTEC representatives measured the depth to the water table in each well at various times related to development, in-situ testing and water quality sampling using an electric water-level meter. Depth measurements were referenced to the marked top of the PVC casing. These water levels are shown on the various field forms in Appendix G. Additionally, MACTEC installed data loggers and telemetry units at each of the observation well locations. These data loggers will record water-table elevations over a two-year period as part of a long-term monitoring program established for the site. The results of this monitoring program will be provided in data reports submitted under separate cover.

5.3 Well Development

After well installation was completed, MACTEC developed each well using a submersible pump, in accordance with Section 5.3.6 of the Bechtel Specification. A minimum of ten saturated borehole volumes were removed from each well during the development process. During the development process, MACTEC cycled the pump off and on to create a surge effect in the well. The wells were considered developed when the pumped water was relatively clear and free of suspended sediment in accordance with the Specification. MACTEC measured field indicator parameters during well development using a Horiba U22 and Hach turbidity meter, and recorded this information on well development records. Copies of the well development records are included in Appendix G.

5.4 Well Purging and Sampling

In accordance with Bechtel Laboratory Assignment No. 12, MACTEC purged and sampled observation wells OW-606L, -606U, -621L, -621U, -706L, -706U, -721L, -721U, -735U, -802U, -805U, and -809U using a submersible pump that was set approximately one to two feet above the bottom of the well. MACTEC purged each well until field-measured indicator parameters of water quality “stabilized” and until at least three well volumes were purged. Using a Horiba U22 equipped with a flow-through cell and a HACH turbidity meter, MACTEC measured the following field-indicator parameters in accordance with ASTM D 6452-99 (2005):

- Temperature
- pH
- Electrical conductivity (specific conductance)
- Turbidity
- Oxidation-reduction potential (redox)
- Dissolved oxygen

MACTEC calibrated the Horiba and Hach meters at least daily during well purging activities and recorded this information in field notebooks. Stabilization of field parameters was based on three consecutive measurements showing values with the following criteria, made at intervals not less than one-half well volume or five minutes, whichever was greater, unless directed otherwise by Bechtel:

- pH: ± 0.1 pH units
- Dissolved oxygen: ± 0.3 mg/liter
- Electrical conductivity: ± 3 percent
- Oxidation-reduction potential: ± 10 mv
- Turbidity ± 1 nephelometric turbidity unit (NTU), or ± 10 percent if greater than 10 NTUs

The pumping rate during field-indicator parameter measurement collection and sample collection was kept low enough to minimize sample turbidity, sample aeration, bubble formation, and turbulent filling of the sample containers. The purging method used was consistent with “purging based on fixed volume combined with indicator parameter stabilization” as described in ASTM D 6452-99. In accordance with Section 5.5.4 of the Bechtel Specification, the final field-indicator parameter readings are summarized in Table 5.2. Well sampling record sheets are included in Appendix G.

5.5 Laboratory Testing of Groundwater Samples

MACTEC filled the laboratory-provided sample containers with groundwater directly from the tubing attached to the pump. The containers were placed in a cooler with ice, and the cooler was delivered by overnight courier to the TestAmerica Laboratories, Inc. in Earth City, Missouri under chain-of-custody. TestAmerica tested the groundwater samples for the following parameters according to the current methods cited in “Methods for Chemical Analysis of Water and Wastes,” EPA-600/4-79-020 using the methods cited:

- Total dissolved solids -- EPA Method 160.1
- Inorganic ions (bromide, chloride, fluoride, sulfate) -- EPA Method 300.0
- Cations (calcium, iron, magnesium, manganese, potassium, silica, silicon, and sodium) -- EPA 6020C
- Alkalinity (bicarbonate/carbonate) -- EPA Method 310.1.
- Nitrogen as Ammonia -- EPA Method 350.1.
- Nitrate/nitrite -- EPA Method 300.0
- Cation/anion balance -- Laboratory standard procedure

Section 5.5.5 of the Bechtel Specification indicated testing for cations by EPA Method 200 and nitrate and nitrite by EPA Method 353.1. Prior to submitting the groundwater samples to TestAmerica, MACTEC submitted Supplier Deviation Disposition Request (SDDR) No. 41 requesting the use of Methods 6020C for cations and 300.0 for nitrate/nitrite. Bechtel approved the use of these methods through the acceptance of SDDR No. 41 on May 28, 2008. Silica is not a cation; therefore, TestAmerica used Method 6020 to test for silicon, and calculated the resulting silica content based on the assumption that all of the silicon was silica.

Also, the Specification listed cation/anion balance as a laboratory report item. TestAmerica reported the ion balance difference as a %, using Standard Method 18 1030F.

During laboratory testing, the results of matrix spike and matrix spike duplicate (MS/MSD) samples were commonly outside of the established quality control (QC) limits. TestAmerica indicated that matrix interference was likely the cause of poor MS/MSD recoveries. According to TestAmerica, the MS/MSD samples are prepared prior to testing, with no known range of analyte concentrations in the samples. Therefore, high concentrations of target analytes in the samples could interfere with MS/MSD recoveries. Additionally, the majority of the samples with poor MS/MSD recoveries required dilutions to bring the results into the calibration range of the

machine. Therefore, these spiked amounts, added prior to any knowledge of actual sample concentrations, were likely diluted out of the final results (i.e. the dilution resulted in elevated method detection limits and quantitation limits that could not detect the spiked amount). MS/MSD recoveries for those analytes not requiring high dilutions and not impacted by matrix interference show acceptable recovery values. Additionally, the results of laboratory control samples were within QC limits and demonstrate the Method performance. Therefore, the data generated is deemed to be reliable.

The holding time for the total dissolved solid (TDS) tests for the groundwater samples collected from observation wells OW-735U and OW-809U was exceeded. The test method states that these analyses need to be conducted as soon as possible. The tests were run within the hold time, but the results exceeded the standard operating procedure (SOP) limit of 200 milligrams, which is referenced in Method 160.1. Because the samples had to be diluted and tested again, TestAmerica had to flag the samples as being run outside of the hold time. However, the samples were immediately placed into an iced-cooler chest upon collection and were subsequently refrigerated upon receipt by TestAmerica until analysis. Based on these preservation techniques, biological decomposition of the samples should have been minimal. Therefore, the exceedance of the hold time is not considered to have adversely affected the quality of the data. Additional TDS testing of other samples collected from the site exhibited similar concentrations of TDS and are used as supporting evidence that the result for OW-735U is reliable.

Review of the test results for OW-621U, OW-706L, and OW-809U identified TDS concentrations that were significantly lower than the summed analyte totals. Review by TestAmerica did not identify an error in calculations or measurements, and a source for the difference could not be determined. The TDS results for samples OW-621U, OW-706L, and OW-809U are not considered valid and should not be used for calculations or relied upon for decision making purposes. Table 5.3 has been annotated to note that these results have been rejected.

TestAmerica detected silicon and silica in the method blank associated with the groundwater sample collected from observation well OW-621L, and chloride in the groundwater samples collected from observation wells OW-621L, OW-802U, and OW-805U at estimated concentrations below the respective quantitation limits. TestAmerica detected iron in the method blank associated with groundwater samples collected from observation wells OW-606U, OW-606L, OW-621U, OW-706U, OW-706L, OW-721U, OW-721L, OW-735U, and OW-809U at estimated concentrations below the respective quantitation limits. Because the results reported for these analytes in the corresponding groundwater samples were significantly higher (typically greater than 10x the blank amount) and because these reported values are similar to others reported for the site without method blank contamination, MACTEC concludes that these data should be used with caution. The exception is the iron result for the groundwater sample collected from observation well OW-606L, which was detected at a concentration less than 4x that reported for the associated method blank. Based on guidance from the US EPA in *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (EPA 540-R-04-004), MACTEC recommends qualifying this result as non-detect at the quantitation limit of 50 µg/L.

The laboratory test results for ground-water chemistry are summarized on Table 5.3 and copies of the laboratory test reports are included in Appendix G.

5.6 In-Situ Hydraulic Conductivity Testing

In-situ hydraulic conductivity testing was conducted in observation wells OW-606U and L, OW-621U and L, OW-636U and L, OW-706U and L, OW-721U and L, OW-735U and L, OW-802U and L, OW-805U and L, OW-809U and L, and OW-812U and L following methods in Section 5.3.7.1 of the Bechtel Specification and as assigned by Bechtel. The testing used procedures described in Section 8 of ASTM D 4044-96 (2002). The test procedure is commonly termed the slug test method. Slug testing involves establishing a static water level, lowering a solid cylinder into the well to cause an increase of water level in the well and monitoring the time rate for the well water level to return to the pre-test static level. This method is commonly called the “falling head” method. After stabilization of the water level due to the falling head test, the slug is rapidly removed to create a lowering of the water level in the well, and the time rate for water to recover to the pre-test static level is recorded. This method is commonly called the “rising head” method. Electronic transducers and data loggers are used for measuring the water levels and times during the test. The rising and lowering of the static water level can also be achieved using a pump or pneumatic methods if the hydraulic conductivity of the aquifer surrounding the well is high enough that traditional slug methods do not create a significant change in head such that a response curve can be generated. MACTEC used pneumatic and traditional solid slug methods during this investigation, in accordance with Section 5.3.7.1 of the Specification. Based on the use of pneumatic methods for inducing the head changes in wells OW-606U, OW-621U, OW-636U, OW-636L, OW-802U, OW-802L, OW-805U, OW-805L, OW-812U, and OW-812L, falling head tests were conducted at these locations. Bechtel approved the use of rising head tests only for these wells in their acceptance of SDDR 40 on June 11, 2008.

Water-level measurements were collected on a logarithmic cycle throughout the slug tests using In-situ Level Troll 700 data loggers. At the completion of each slug test, water-level measurements were downloaded from the data loggers. These data were imported into AQTESOLV™ for Windows version 4.5 and evaluated using either the Butler, KGS, McElwee-Zenner, or Springer-Gelhar methods. Due to the rapid recovery of these wells, analysis of the data needed to be conducted using a method designed for highly permeable materials.

The Butler method, which accounts for oscillatory water-level response sometimes observed in aquifers of high hydraulic conductivity, is based on the following assumptions:

- Aquifer has infinite areal extent
- Test well is partially penetrating
- Aquifer is confined
- Aquifer is homogeneous and of uniform thickness
- Flow is quasi-steady state
- Volume of water, V , is injected into or discharged from the well instantaneously

The KGS method was developed for an overdamped slug test in both confined and unconfined aquifers for fully or partially penetrating wells. The KGS method is based on the following assumptions:

- Aquifer has infinite areal extent
- Aquifer potentiometric surface is initially horizontal
- Aquifer is confined or unconfined
- Water is released instantaneously from storage with decline of hydraulic head
- Aquifer is homogeneous and of uniform thickness
- Test and observation wells are fully or partially penetrating
- Flow is unsteady
- Volume of water, V , is injected into or discharged from the well instantaneously

storage with decline of hydraulic head

discharged from the well instantaneously

The McElwee-Zenner method was developed for a single-well slug test in a homogeneous confined aquifer that accounts for the complete range of water-level responses from overdamped to underdamped (oscillatory). The McElwee-Zenner method is based on the following assumptions:

- Aquifer has infinite areal extent
- Test well is partially penetrating
- Aquifer is confined
- Aquifer is homogeneous and of uniform thickness
- Flow is quasi-steady state
- Volume of water, V , is injected into or discharged from the well instantaneously

The Springer-Gelhar method was developed for a slug test in a homogeneous, anisotropic unconfined aquifer and accounts for the oscillatory water-level responses sometimes observed in aquifers of high hydraulic conductivity. The Springer-Gelhar method is based on the following assumptions:

- Aquifer has infinite areal extent
- Test well is fully or partially penetrating
- Aquifer is unconfined
- Aquifer is homogeneous and of uniform thickness
- Flow is quasi-steady state
- Volume of water, V , is injected into or discharged from the well instantaneously

Based on these methods, values of hydraulic conductivity were calculated for each slug test conducted.

A summary of the slug test results is provided in Table 5.4. The software output plots used to analyze the slug test data are included in Appendix G.

Based on the results of the slug test analyses, hydraulic conductivity estimates for the wells completed in the Miami Formation (the “U” wells) ranged from approximately 4.5 to 319 feet per day, and estimates for the wells completed in the Fort Thompson Formation (the “L” wells) ranged from approximately 1 to 109 feet per day. These values are different than the results for these rock units published by the U.S. Geological Survey in *Hydrogeology of the Surficial Aquifer System, Dade County, Florida* (USGS; 1991, Water-Resources Investigations Report 90-4108). The results of aquifer tests conducted by the USGS identified estimated hydraulic conductivities for the Miami Formation that ranged from 29,000 to 42,000 feet per day. Estimates for the Fort Thompson Formation ranged from 450 to greater than 55,000 feet per day, with most estimates on the order of ten thousands of feet per day.

One potential explanation for the low hydraulic conductivity estimates from the slug tests is due to well construction techniques. All of MACTEC’s wells were completed as screened wells with a sand filter installed in the annulus between the screen and borehole walls. All of the USGS wells referenced in WRIR 90-4108 were completed as open-hole wells. Typical sand filters would have a much lower hydraulic conductivity than reported for the surrounding aquifer materials. The sand filter likely controlled the flow rate of groundwater into the wells during slug testing. Therefore, the hydraulic conductivity results presented in Table 5.4 are likely biased low, and are not considered representative of the hydrogeologic units.

**FINAL DATA REPORT Rev. 2
GEOTECHNICAL EXPLORATION AND TESTING**

**TURKEY POINT COL PROJECT
FLORIDA CITY, FLORIDA**

October 6, 2008

**VOLUME 1
Tables**

Prepared By:

**MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina**

MACTEC Project No. 6468-07-1950

Prepared For:

**Bechtel Power Corporation
Subcontract No. 25409-102-HC4-CY00-00001**

TABLE 1.1
ORGANIZATIONS PERFORMING WORK AT THE SITE OR IN THE LABORATORY

Organization	Function
MACTEC Engineering and Consulting, Inc.	<ul style="list-style-type: none"> • Underground Utility Clearance • Surveying of borings, observation wells, CPT locations, test pits and geophysical test locations • Geotechnical soil borings with SPT tests • Undisturbed Sampling • Boring Abandonment • Bulk Sampling • Geotechnical Laboratory Testing for Soil samples • SPT Energy Measurement on Drill Rig • Well Installation • Water Sampling • Slug Testing • Aquifer Pumping Test • Logging of Soil Borings • Site Coordination
Fugro Consultants, Inc.	<ul style="list-style-type: none"> • Field CPT Testing • RCTS Testing • Direct shear testing
STL Laboratories (Test America)	<ul style="list-style-type: none"> • Chemical Testing for Soil and Water samples
Miller Drilling, Inc.	<ul style="list-style-type: none"> • Geotechnical soil borings with SPT tests • Undisturbed Sampling
GEOVision	<ul style="list-style-type: none"> • Downhole geophysical logging • P-S suspension logging
University of Texas Austin/Dr. Stokoe	<ul style="list-style-type: none"> • Review of RCTS Test results

TABLE 2.1
TESTING SUMMARY - Borings - Cone Penetrometer - Test Pits
Turkey Point COL Project
MACTEC Project Number 6468071950

Boring Number	Boring Type			CPT	Equipment		Depth		As-Built Coordinates/Elevations			In-Situ Testing						
	SPT	Core	UD Tubes		Drill Rig	Hammer ID	Proposed (ft)	Actual (ft)	Northing (US ft)	Easting (US ft)	Ground Surface Elevation (ft)	P-S Suspension	Deviation	Natural Gamma	Resistivity	Caliper	Spontaneous Potential	Down Hole Velocity Logging
B-601(DH)	X	X			CME-75 (CLT)	MEC-09	400	419.2	396,967.9	876,642.9	-1.4	X	X	X	X	X	X	
B-602	X	X			CME-45C (RAL)	MEC-12	200	204.1	397,019.6	876,594.1	-1.4							
B-603	X	X			CME-550 (ATL)	MEC-03	150	151.2	397,018.4	876,697.0	-1.4							
B-604(DH)	X	X			CME-550X (ATL)	MEC-05	150	165.0	396,915.9	876,591.6	-1.5	X	X	X	X	X	X	
B-605	X	X			CME-550 (ATL)	MEC-03	200	201.0	396,916.8	876,694.1	-1.7							
B-606	X	X			CME-550 (ATL)	MEC-03	150	151.2	396,958.9	876,738.0	-1.4							
B-607	X	X			CME-550 (ATL)	MEC-03	150	152.5	396,830.0	876,644.2	-1.5							
B-608(DH)	X	X			CME-550X (ATL)	MEC-05	250	265.4	396,829.5	876,735.9	-1.5	X	X	X	X	X	X	
B-609	X	X			CME-550 (ATL)	MEC-03	150	150.7	396,762.5	876,689.0	-1.5							
B-610(DH)	X	X			CME-750 (Miller)	07	250	269.0	397,084.2	876,644.4	-1.4	X						
B-611	X	X			CME-550 (CLT)	MEC-04	150	151.5	397,086.7	876,735.0	-1.5							
B-612	X	X			CME-550 (ATL)	MEC-03	125	125.1	397,085.5	876,869.1	-1.5							
B-613	X	X			CME-550 (Miller)	M06	150	150.2	397,162.2	876,809.4	-1.4							
B-614	X	X			CME-550 (Miller)	M06	125	128.0	397,204.1	876,870.7	-1.5							
B-615	X	X			CME-55 LC (RAL)	MEC-02	150	150.6	397,167.4	876,761.8	-1.5							
B-616	X	X			CME-550 (ATL)	MEC-03	125	125.0	397,207.9	876,723.7	-1.2							
B-617	X	X			CME-550 (ATL)	MEC-03	125	126.1	397,288.1	876,721.7	-1.4							
B-618	X	X			CME-45C (RAL)	MEC-12	150	154.7	397,207.6	876,643.1	-1.4							
B-619	X	X			CME-45C (RAL)	MEC-12	125	128.7	397,293.9	876,653.7	-1.7							
B-620(DH)	X	X			CME-750 (Miller)	07	200	215.0	397,394.9	876,648.3	-1.5	X	X	X	X	X	X	
B-621	X	X			CME-55 LC (RAL)	MEC-02	100	126.5	397,367.6	876,949.3	0.2							
B-622	X	X			CME-55 LC (RAL)	MEC-02	100	100.2	397,421.2	876,810.7	0.2							
B-623	X	X			CME-55 LC (RAL)	MEC-02	100	100.2	397,422.6	876,523.2	-1.3							
B-624	X	X			CME-550 (ATL)	MEC-03	100	103.2	397,327.1	876,514.1	-1.4							
B-625	X	X			CME-550 (Miller)	M06	125	126.7	397,106.5	876,960.5	-1.4							
B-626	X	X			CME-550 (Miller)	M06	100	100.6	396,874.5	876,857.2	-1.6							
B-627	X	X			CME-550 (ATL)	MEC-03	100	102.0	396,835.2	876,332.9	-1.3							
B-628	X	X			CME-750 (Miller)	07	125	127.9	397,072.9	876,473.2	-1.5							
B-629	X	X			CME-550 (ATL)	MEC-03	100	100.3	396,971.9	876,346.1	-1.1							
B-630	X	X	X		CME-550X (ATL)	MEC-05	280	294.0	396,871.5	876,462.1	-1.5							
B-631	X	X			CME-550 (Miller)	M06	100	100.8	396,655.1	876,514.1	-1.2							
B-632	X	X			CME-550 (Miller)	M06	100	100.3	396,432.4	876,737.0	-1.6							
B-633	X	X			CME-55 Marsh Buggy	MEC-425	100	100.4	396,113.3	876,993.9	-1.5							
B-634	X	X			CME-550 Marsh Buggy	893	125	127.5	395,758.2	876,677.2	-0.7							
B-635	X	X			CME-550 Marsh Buggy	893	125	128.5	395,770.9	876,798.2	-0.9							
B-636	X	X			CME-55 Marsh Buggy	MEC-425	125	126.0	395,714.8	877,193.2	-1.1							
B-637	X	X			CME-55 Marsh Buggy	MEC-425	150	150.0	395,693.1	877,310.3	-0.2							
B-639	X	X			CME-550 (ATL)	MEC-03	100	102.6	396,963.5	876,998.2	-1.4							
B-640(DHT)/C-602A				X	CME-750 (Miller) / Fugro CPT Track Rig	07	150	150.0	397,116.6	876,528.3	-0.3							X
B-701(DH)	X	X			CME-750 (Miller)	07	600	615.5	396,976.1	875,792.3	-1.1	X	X	X	X	X	X	
B-702	X	X			CME-550 (Miller)	M06	200	202.5	397,017.9	875,745.9	-1.2							
B-703	X	X			CME-550 (Miller)	M06	150	150.0	397,018.1	875,846.1	-1.3							
B-704(DH)	X	X			CME-750 (Miller)	07	150	151.5	396,930.7	875,741.7	-1.4							
B-704G(DH)	X	X			CME-550X (ATL)	MEC-05	200	163.5	396,938.6	875,749.0	-1.3	X	X	X	X	X	X	
B-705	X	X			CME-550X (ATL)	MEC-05	200	200.0	396,919.2	875,846.4	-1.3							
B-706	X	X			CME-750 (Miller)	07	150	151.9	396,962.5	875,885.3	-1.2							
B-707	X	X			CME-550 (Miller)	M06	150	152.0	396,828.8	875,790.8	-1.8							
B-708(DH)	X	X			CME-750 (Miller)	07	250	266.5	396,829.7	875,885.7	-1.4	X	X	X	X	X	X	
B-709	X	X			CME-550X (ATL)	MEC-05	150	150.0	396,760.5	875,840.6	-1.3							
B-710(DH)	X	X			CME-75 (CLT)	MEC-09	250	250.9	397,086.9	875,792.9	-1.3							

TABLE 2.1
TESTING SUMMARY - Borings - Cone Penetrometer - Test Pits
Turkey Point COL Project
MACTEC Project Number 6468071950

Boring Number	Boring Type				Equipment		Depth		As-Built Coordinates/Elevations			In-Situ Testing						
	SPT	Core	CPT	Test Pit	Drill Rig	Hammer ID	Proposed (ft)	Actual (ft)	Northing (US ft)	Easting (US ft)	Ground Surface Elevation (ft)	P-S Suspension	Deviation	Natural Gamma	Resistivity	Caliper	Spontaneous Potential	Down Hole Velocity Logging
B-710(DH)R	X				CME-550 (CLT)	MEC-04	15	15.0	397,087.2	875,781.9	-1.3							
B-710G(DH)					CME-550X (ATL)	MEC-05	265	273.5	397,075.1	875,792.2	-1.4	X	X	X	X	X	X	
B-711	X	X			CME-750 (Miller)	07	150	151.7	397,085.6	875,884.8	-1.1							
B-712	X	X			CME-55 LC (RAL)	MEC-02	125	128.3	397,082.1	876,022.1	-1.1							
B-713	X	X			CME-550 (ATL)	MEC-03	150	152.5	397,179.3	875,959.0	-1.1							
B-714	X	X			CME-550 (Miller)	M06	125	125.6	397,258.7	876,020.6	-1.0							
B-715	X	X			CME-550 (Miller)	M06	150	150.1	397,259.2	875,908.5	-0.9							
B-716	X	X			CME-55 LC (RAL)	MEC-02	125	126.6	397,214.3	875,872.7	-1.1							
B-717	X	X			CME-550 (ATL)	MEC-03	125	127.2	397,287.0	875,873.1	-1.1							
B-718	X	X			CME-550 (ATL)	MEC-03	150	150.8	397,190.9	875,792.6	-1.2							
B-719	X	X			CME-55 LC (RAL)	MEC-02	125	126.7	397,293.2	875,791.3	-1.1							
B-720(DH)	X	X			CME-550X (ATL)	MEC-05	200	204.9	397,396.7	875,791.1	-0.9							
B-720G(DH)					CME-55 Marsh Buggy	MEC-425	215	220.8	397,385.2	875,794.0	-1.1	X	X	X	X	X	X	
B-721	X	X			CME-550 (ATL)	MEC-03	100	127.4	397,338.0	876,120.1	-1.5							
B-722	X	X			CME-550 (ATL)	MEC-03	100	103.2	397,434.2	875,979.6	-1.0							
B-723	X	X			CME-550 (Miller)	M06	100	100.6	397,421.2	875,675.4	-1.0							
B-724	X	X			CME-550 (Miller)	M06	100	100.0	397,325.5	875,663.2	-0.7							
B-725	X	X			CME-550 (Miller)	M06	125	126.6	397,099.8	876,111.2	-1.0							
B-726	X	X			CME-550 (Miller)	M06	100	100.5	396,875.6	876,003.9	-1.4							
B-727	X	X			CME-550 (Miller)	M06	100	100.9	397,117.7	875,666.1	-1.3							
B-728	X	X			CME-550 (Miller)	M06	125	126.6	397,070.5	875,620.1	-1.4							
B-729	X	X			CME-550 (Miller)	M06	100	100.9	396,970.7	875,493.4	-1.2							
B-730	X	X			CME-550 (ATL)	MEC-03	100	103.2	396,868.0	875,621.0	-1.0							
B-731	X	X			CME-550 (ATL)	MEC-03	100	103.2	396,645.6	875,423.1	-1.5							
B-732	X	X			CME-750 (Miller)	07	100	104.5	396,412.1	875,682.4	-1.0							
B-733	X	X			CME-550 (ATL)	MEC-03	100	103.5	396,117.5	875,897.5	-1.0							
B-734	X	X			CME-45C (RAL)	MEC-12	125	130.0	395,833.2	875,546.3	-0.6							
B-735	X	X			CME-45C (RAL)	MEC-12	125	128.0	395,824.7	875,689.4	-0.8							
B-736	X	X			CME-45C (RAL)	MEC-12	125	125.0	395,808.5	876,107.1	-0.5							
B-737	X	X			CME-550 Marsh Buggy	893	150	153.3	395,803.7	876,237.8	-0.6							
B-738	X	X			CME-45C (RAL)	MEC-12	100	101.2	397,728.1	875,607.3	0.1							
B-739	X	X			CME-750 (Miller)	07	100	101.0	396,962.9	876,149.6	-1.6							
B-740(DHT)					CME-550 (Miller)	M06	150	150.0	397,137.2*	875,841.7*	-0.8							X
B-802	X	X			CME-550 Marsh Buggy	893	125	128.5	398,817.1	876,265.7	-1.5							
B-805	X	X			CME-55 Marsh Buggy	MEC-425	125	125.3	396,883.0	877,239.5	-1.6							
B-806	X	X			CME-550 Marsh Buggy	893	125	127.4	395,288.3	877,237.4	-0.4							
B-807	X	X			CME-550 Marsh Buggy	893	125	128.5	395,277.5	875,987.8	-0.7							
B-808	X	X			CME-550 Marsh Buggy	893	125	126.4	396,204.9	875,331.8	-1.0							
B-809	X	X			CME-550 Marsh Buggy	893	125	124.5	397,028.0	875,151.3	-1.3							
B-810	X	X			CME-550 Marsh Buggy	893	125	127.0	397,806.7	875,012.4	-1.2							
B-811	X	X			CME-550 (Miller)	M06	125	127.3	398,325.2	874,953.8	-1.4							
B-812	X	X			CME-550 Marsh Buggy	893	125	128.7	398,913.2	875,043.1	-1.4							
B-813	X	X			CME-550 Marsh Buggy	893	125	126.5	399,047.6	876,097.3	-1.3							
B-814	X	X			CME-550 (Miller)	M06	125	153.2	399,138.9	877,404.8	9.0							
C-601			X		Fugro CPT Track Rig	NA	120-220	120-226	397,129.8	876,361.3	-0.1							
C-602**			X		Fugro CPT Track Rig	NA	120-220	120-222	397,115.6	876,534.6	-0.5							
C-701			X		Fugro CPT Track Rig	NA	120-220	120-290	397,100.2	875,839.3	-1.4							
C-702			X		Fugro CPT Track Rig	NA	120-220	120-221	397,149.4	876,042.2	0.3							
TP-601				X	Back Hoe	NA	NA	5.2	397,105.6	876,035.8	-1.4							
TP-701				X	Back Hoe	NA	NA	5.0	396,988.2	875,508.5	-1.4							

*Location adjacent to PVC pipe in hole.
 **C-602 abandoned; redone as C-602A at B-640(DHT) location.

TABLE 4.1
SUMMARY OF SOIL LABORATORY
INDEX AND CLASSIFICATION
TEST RESULTS
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Prepared By ZHU 8-19-08
 Checked By J. 8-19-08

Boring Number	Sample Number	Depth (ft)	Gravel (%)	Sand (%)	Fines (%)	Silt (%)	0.005 mm Clay (%)	USCS Symbol (1)	Natural Moisture (%)	LL	PI	G _s
B-601(DH)	601-3	5.3-6.8	39	38	23			GM				
B-601(DH)	601-5	9.7-11.2	59	40	1			GP				
B-601(DH)	601-6	12.5-14	54	36	10			GP-GM				
B-601(DH)	601-8	21.4-22.9	59.5	23.3	17.2	10.4	6.8	GM				
B-601(DH)	601-10B	122-122.7	1	81	18			SM				
B-601(DH)	601-11	128.3-129.8	0.0	75.5	24.5	14.4	10.1	SM				
B-601(DH)	601-14	158.4-159.9	0	40	60			CL		24	10	
B-601(DH)	601-16	178.4-179.9	0	40	60			ML		22	2	
B-601(DH)	601-18	198.4-199.9	0	33	67			CL		25	13	
B-601(DH)	601-19	208.4-209.9	0	28	72			CL		34	13	
B-601(DH)	601-23	248.4-249.9	0	80	20			SM				2.70
B-601(DH)	601-28	298.4-299.9	0.0	84.7	15.3	7.3	8.0	SM				
B-601(DH)	601-32	338.4-339.2	0.0	82.5	17.5	10.2	7.3	SM				
B-601(DH)	601-34	358.4-358.9	0	85	15			SM				
B-601(DH)	601-36	378.4-379.1	0	87	13			SM				
B-601(DH)	601-38	398.4-399.2	0.0	84.1	15.9	7.6	8.3	SM				
B-601(DH)	601-39	418.4-419.2	0	88	12			SP-SM				
B-602	602-3	4.8-6.3	47	37	16			GM				
B-602	602-9	122.6-124.1	0.6	79.1	20.3	11.9	8.4	SM				
B-602	602-11	142.5-144	0	67	33			SM				
B-602	602-13	162.6-164.1	0	40	60			ML				
B-602	602-16	192.6-194.1	0.0	34.9	65.1	54.7	10.4	ML				
B-602	602-17	202.6-204.1	0	24	76			ML				
B-603	603-3	5-6.5	44	38	18			GM				
B-603	603-5	10-11.5	60	22	18			GM				
B-603	603-8	120.5-122	5.3	33.3	61.4	49.0	12.4	ML				
B-603	603-10	131.7-133.2	6	65	29			SM				
B-603	603-11	136.4-137.9	1.5	85.7	12.8	7.8	5.0	SM				
B-603	603-14	149.7-151.2	0	58	42			SM				
B-604(DH)	604-4	8.5-10	52.0	34.1	13.9	7.5	6.4	GM				
B-604(DH)	604-9	28.5-30	43	39	18			GM				
B-604(DH)	604-13	138.5-140	1	70	29			SM				
B-604(DH)	604-15	163.5-165	0.0	37.4	62.6	52.8	9.8	ML				
B-605	605-4	7.5-9	43	45	12			SP-SM				
B-605	605-6	12.5-14	34	53	13			SM				
B-605	605-8	20-21.5	0	90	10			SP-SM				
B-605	605-10	30-31.5	59	27	14			GM				

TABLE 4.1
SUMMARY OF SOIL LABORATORY
INDEX AND CLASSIFICATION
TEST RESULTS
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Prepared By ZHU 8-19-08
 Checked By [Signature] 8-19-08

Boring Number	Sample Number	Depth (ft)	Gravel (%)	Sand (%)	Fines (%)	Silt (%)	0.005 mm Clay (%)	USCS Symbol (1)	Natural Moisture (%)	LL	PI	G _s
B-605	605-12	119.9-121.4	0.0	48.1	51.9	37.1	14.8	ML				
B-605	605-15	131.4-132.9	0	64	36			SM				2.67
B-605	605-18	144.9-146.4	0.0	57.8	42.2	32.8	9.4	SM				
B-605	605-20	154.9-156.4	0	58	42			SM				
B-605	605-22	164.5-166	0.0	40.0	60.0	48.1	11.9	ML				
B-605	605-24	174.5-176	0	40	60			ML				
B-605	605-26	184.5-186	0.0	38.5	61.5	47.9	13.6	ML				
B-605	605-27	189.5-191	0	42	58			ML				
B-605	605-28	194.5-196	0	40	60			CL-ML		24	5	
B-605	605-29	199.5-201	0.0	30.3	69.7	54.7	15.0	ML				
B-606	606-8	119.4-121.9	2.1	78.4	19.5	8.9	10.6	SM				
B-606	606-9	129.7-131.2	0.4	60.6	39.0	28.3	10.7	SM				
B-606	606-11	149.7-151.2	0	59	41			SM				
B-607	607-3	5-6.5	32	46	22			SM				
B-607	607-6	12.5-14	33	48	19			SM				
B-607	607-9	129.5-131	0.4	68.9	30.7	16.3	14.4	SM				
B-607	607-10	139.5-141	0	70	30			SC-SM		18	4	
B-607	607-12	151-152.5	0.0	55.3	44.7	35.0	9.7	SM				
B-608(DH)	608-7	18.5-20	49	37	14			GM				
B-608(DH)	608-11	117.8-119.3	0	84	16			SM				
B-608(DH)	608-12	128-129.5	0	77	23			SM				
B-608(DH)	608-14	148-149.5	0	90	10			SP-SM		NV	NP	
B-608(DH)	608-17	178-179.5	0	42	58			ML		24	2	
B-608(DH)	608-22	228-229.3	0	62	38			SM		21	3	
B-608(DH)	608-24	248.9-250.4	0	75	25			SM				
B-609	609-3	5-6.5	35	42	23			SM				
B-610(DH)	610-4	7.5-9	35	43	22			SM				
B-610(DH)	610-8	116-117.5	5.3	82.7	12.0	4.3	7.7	SP-SM				
B-610(DH)	610-10	132.5-134	9	60	31			SM				
B-611	611-4	7.5-9.0	42	39	19			GM				
B-614	614-3	5.1-6.6	0	59	41			SM				
B-614	614-7	14.6-16.1	0	73	27			SM				
B-614	614-11	116.4-117.9	35.3	50.4	14.3	7.7	6.6	SM				
B-614	614-12	126.5-128	0	75	25			SM				

TABLE 4.1
SUMMARY OF SOIL LABORATORY
INDEX AND CLASSIFICATION
TEST RESULTS
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Prepared By ZHU 8-19-08
 Checked By JS 8-19-08

Boring Number	Sample Number	Depth (ft)	Gravel (%)	Sand (%)	Fines (%)	Silt (%)	0.005 mm Clay (%)	USCS Symbol (1)	Natural Moisture (%)	LL	PI	G _s
B-616	616-9	24.5-26	42	48	10			SW-SM				
B-616	616-12	123.5-125	13	69	18			SM				
B-619	619-4	7.1-8.6	50	37	13			GM				
B-619	619-6	12.1-13.6	51	38	11			GP-GM				
B-619	619-8	121.6-123.1	0.3	78.2	21.5	11.0	10.5	SM				
B-620(DH)	620-3	5-6.5	39	43	18			SM				
B-620(DH)	620-5	10.5-11.5	59.1	29.3	11.6	5.6	6.0	GP-GM				
B-620(DH)	620-8	19.5-21.0	13	76	11			SP-SM				
B-620(DH)	620-10	120.5-122	51	31	18			GM				
B-621	621-4	7.5-9	43	38	19			GM				
B-621	621-8	18.5-20	51	29	20			GM				
B-621	621-11	115.3-116.8	0.0	90.6	9.4	3.2	6.2	SP-SM				
B-621	621-12	125-126.5	0.0	76.1	23.9	13.1	10.8	SM				
B-625	625-3	5.1-6.6	38	47	15			SM				
B-625	625-6	12.5-14	0.0	69.0	31.0	16.9	14.1	SM				
B-625	625-7	15.2-16.4	62	34	4			GW				
B-625	625-8	120.4-121.3	2.3	63.3	34.4	28.5	5.9	SM				
B-625	625-9	125.2-126.7	1.8	71.9	26.3	16.8	9.5	SM				
B-630	UD-2	129.5-132	0.0	76.5	23.5	13.8	9.7	SM	32.5	25	1	
B-630	UD-8	161.5-163.1	0.0	36.5	63.5	55.6	7.9	ML	31.4	26	2	
B-630	UD-13	188.5-191	0.0	47.3	52.7	43.5	9.2	ML	30.0	22	3	
B-630	UD-16	208.5-211	0.0	21.3	78.7	60.9	17.8	CL	29.8	34	10	
B-630	UD-19	228.5-231	0.0	47.6	52.4	47.6	4.8	ML	23.6	24	3	
B-630	UD-23	258.5-261	0.0	79.6	20.4	14.8	5.6	SC-SM	22.7	20	5	
B-630	UD-27	291.5-294	0.0	76.1	23.9	16.4	7.5	SM	22.1	23	3	
B-701(DH)	701-1	0-1.5	0	55	45			SM	INS	INS		
B-701(DH)	701-2B	2.9-4	46	35	19			GM				
B-701(DH)	701-3	5.6-6.6	0	60	40			SM				
B-701(DH)	701-6	12.5-14	67	25	8			GP-GM				
B-701(DH)	701-8	115.5-117	8	79	13			SM				
B-701(DH)	701-9	122.7-124.2	12.1	67.5	20.4	11.0	9.4	SM				
B-701(DH)	701-10	127.5-129	5	66	29			SM				
B-701(DH)	701-12	147.5-149	0	57	43			SM		23	1	

TABLE 4.1
SUMMARY OF SOIL LABORATORY
INDEX AND CLASSIFICATION
TEST RESULTS
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Prepared By ZHU 8-19-08
 Checked By JQ 8-19-08

Boring Number	Sample Number	Depth (ft)	Gravel (%)	Sand (%)	Fines (%)	Silt (%)	0.005 mm Clay (%)	USCS Symbol (1)	Natural Moisture (%)	LL	PI	G _s
B-701(DH)	701-15	172.5-174	0	38	62			ML		22	3	
B-701(DH)	701-18	197.6-199.1	0	31	69			ML		25	3	
B-701(DH)	701-19	207.6-209.1	0	74	26			SM		29	5	
B-701(DH)	701-20	217.5-219	0	69	31			SM		25	3	
B-701(DH)	701-22	237.5-239	0	56	44			SC-SM		21	17	
B-701(DH)	701-28	297.5-299	0.0	85.5	14.5	5.3	9.2	SM				2.68
B-701(DH)	701-33	347.5-348.9	0	89	11			SP-SM		NV	NP	
B-701(DH)	701-38	397.5-398.8	0	94	6			SP-SM		NV	NP	
B-701(DH)	701-39	407.5-409	0	89	11			SP-SM		NV	NP	
B-701(DH)	701-41	427.5-428.9	0	89	11			SP-SM		NV	NP	
B-702	702-3	5.1-6.6	31	48	21			SM				
B-702	702-7	14.7-16.2	45.2	42.7	12.1	5.8	6.3	GP-GM				
B-702	702-10	31.0-32.5	36	55	9			SP-SM				
B-702	702-12	119.2-120.7	21	67	12			SP-SM				
B-702	702-21	176.2-177.7	0.0	31.8	68.2	56.4	11.8	ML				
B-702	702-23	196.2-197.7	0	28	72			ML		22	2	
B-703	703-3	5.2-6.7	58	30	12			GP-GM				
B-703	703-6	12.3-13.8	3	88	9			SP-SM				
B-703	703-9	118.6-120.1	0.0	91.2	8.8	1.5	7.3	SP-SM				
B-703	703-10	123.8-125.3	0	77	23			SM				2.66
B-703	703-12	133.5-135	0.2	74.6	25.2	14.2	11.0	SM				
B-703	703-14	143.5-145	0	62	38			SC-SM		24	5	
B-703	703-15	148.5-150	0.0	81.3	18.7	8.9	9.8	SM				
B-704(DH)	704-4	7.4-8.9	37	40	23			SM				
B-704(DH)	704-10	28.5-30	14	69	17			SM				
B-704(DH)	704-15	123-124.5	57	33	10			GW-GM				
B-704(DH)	704-16	128-129.5	7	67	26			SM				
B-704(DH)	704-17	133-134.5	10.1	61.8	28.1	16.5	11.6	SM				
B-704(DH)	704-18	138-139.5	11	60	29			SM				
B-704(DH)	704-21	150-151.5	0.0	58.0	42.0	31.6	10.4	SM				
B-705	705-4	7.5-9	71	18	11			GP-GM				
B-705	705-8	18.5-20	58	25	17			GM				
B-705	705-11	33.5-35	36	24	40			GM				
B-705	705-14	128.5-130	0.0	70.0	30.0	15.8	14.2	SM				
B-705	705-16	138.5-140	0	71	29			SM				2.67
B-705	705-18	148.5-150	0.0	59.0	41.0	31.2	9.8	SM				
B-705	705-23	173.5-175	0	41	59			ML				

TABLE 4.1
SUMMARY OF SOIL LABORATORY
INDEX AND CLASSIFICATION
TEST RESULTS
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Prepared By ZHU 8-19-08
 Checked By JAA 8-19-08

Boring Number	Sample Number	Depth (ft)	Gravel (%)	Sand (%)	Fines (%)	Silt (%)	0.005 mm Clay (%)	USCS Symbol (1)	Natural Moisture (%)	LL	PI	G _s
B-705	705-24	178.5-180	0.0	33.4	66.6	53.3	13.3	ML				
B-705	705-27	193.5-195	1	32	67			ML				
B-706	706-2	3.1-4.6	15	39	46			SM				
B-706	706-4	8-9.5	2.0	49.4	48.6	22.7	25.9	SC				
B-706	706-5	10.5-12.9				(Note: samples 706-5 and 706-7 were combined)						2.73
B-706	706-6	12.9-14.4	61	31	8			GP-GM				
B-706	706-7	15.7-16.0				(Note: samples 706-5 and 706-7 were combined)						2.73
B-706	706-9	115.8-117.3	5.5	84.4	10.1	3.9	6.2	SP-SM				2.66
B-706	706-11	125.9-127.4	6	68	26			SM				
B-706	706-13	135.4-136.9	1.8	49.2	49.0	34.0	15.0	SM				
B-706	706-15	145.4-146.9	45	39	16			GM				
B-707	707-6	12.5-14	0	92	8			SP-SM				
B-707	707-10	108.8-110.3	0	70	30			SM				
B-707	707-14	125.3-126.8	1.9	64.1	34.0	20.4	13.6	SM				
B-707	707-16	135.5-137	0	69	31			SM				
B-707	707-18	145.5-147	0.5	53.6	45.9	35.5	10.4	SM				
B-708 (DH)	708-3	5.0-6.5	22	53	25			SM				
B-708 (DH)	708-6	13-14.5	58	36	6			GP-GM				
B-711	711-3	5-6.5	47	34	19			GM				
B-711	711-5	9.9-11.4	67	25	8			GP-GM				
B-711	711-9	24-25.5	46	48	6			SW-SM				
B-711	711-11	120.5-122	0.0	46.9	53.1	44.1	9.0	ML				
B-711	711-12	130.2-131.7	0	67	33			SM				
B-711	711-14	150.2-151.7	12.5	69.1	18.4	8.5	9.9	SM				
B-715	715-3	5-6.5	36	43	21			SM				
B-715	715-5	10-11.5	57	29	14			GM				
B-715	715-8	21.7-23.2	43	37	20			GM				
B-715	715-10	118.4-119.9	21	69	10	3.4	5.9	SP-SM				
B-715	715-11	128.1-129.6	27.7	51.7	20.6	14.0	6.6	SM				
B-715	715-13	148.6-150.1	0	58	42			SM				
B-720 (DH)	720-3	6-7.5	31	49	20			SM				
B-720 (DH)	720-6	13.5-15	59	31	10			GP-GM				
B-720 (DH)	720-8	23.5-25	25	37	38			SM				
B-720 (DH)	720-10	118.4-119.9	0.0	92.0	8.0	1.6	6.4	SP-SM				

TABLE 4.1
SUMMARY OF SOIL LABORATORY
INDEX AND CLASSIFICATION
TEST RESULTS
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Prepared By ZHU 8-19-08
 Checked By JAS 8-19-08

Boring Number	Sample Number	Depth (ft)	Gravel (%)	Sand (%)	Fines (%)	Silt (%)	0.005 mm Clay (%)	USCS Symbol (1)	Natural Moisture (%)	LL	PI	G _s
B-720 (DH)	720-12	138.4-139.9	0.1	65.4	34.5	26.0	8.5	SM				
B-720 (DH)	720-13	148.4-149.9	0	60	40			SM				
B-720 (DH)	720-14	158.4-159.9	1	38	61			ML				
B-730	730-3	3.9-5.4	6	59	35			SM				
B-730	730-5	8.6-10.1	42.2	29.6	28.2	11.0	17.2	GM				
B-730	730-8	19.6-21.1	51	36	13			GM				
B-737	737-3	5-6.5	34	42	24			SM				
B-737	737-5	10-11.5	42	33	25			GM				
B-737	737-8	18.6-20.1	55	31	14			GM				
B-737	737-14B	112.7-113.3	32	46	22			SM				
B-737	737-15	121.8-123.3	2.8	74.0	23.2	14.4	8.8	SM				
B-737	737-17	141.8-143.3	0	64	36			SM				



(1) USCS classifications are visual, except where Liquid Limit and Plasticity Index values were available.
 INS = Insufficient sample available to perform assigned test.
 LL = Liquid Limit, PI = Plasticity Index, G_s = Specific Gravity
 Shaded cells indicate that information was not obtained.

TABLE 4.2
SUMMARY OF SOIL TEST RESULTS
FOR TEST PITS
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Prepared By: ZHU Date: 8/19-08
 Checked By: JA Date: 8-29-08

Test Pit Number	Sample Depth (ft.)	USCS Symbol	Particle Size Analysis			Specific Gravity	Moisture-Density ⁽¹⁾		LBR	CBR			
			Gravel (%)	Sand (%)	Fines (%)		Max. Dry Density (pcf)	Optimum Moisture (%)		Molded Density (pcf)	Molded Moisture (%)	Soaked CBR (0.10")	Soaked CBR (0.20")
TP-601	3.2-5	SP-SM	42	46	12		106.5	16.3	112	103.0	15.9	66.5	63.9
										104.5	16.5	69.1	65.8
										107.5	16.9	67.3	78.9
TP-701	3-4.5	SM	39	44	17	2.73	106.9	17.4	129	96.1	16.2	22.2	20.9
										96.8	16.5	24.9	21.2
										105.5	16.4	58.9	61.4

(1) Moisture/density testing performed in accordance with ASTM D 1557-02 (Modified Proctor).

LBR= Limerock Bearing Ratio , CBR = California Bearing Ratio

TABLE 4.3
SUMMARY OF LABORATORY TEST RESULTS - ROCK
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Prepared By *[Signature]* 7-24-08
 Checked By *[Signature]* 7/24/08

Boring Number	Run Number	Sample ID	Sample Top Depth (feet)	Sample Length (L) (inches)	Sample Diameter (D) (inches)	L/D Ratio	Unit Weight (pcf) ⁽¹⁾	Moisture Content (%)	Type of Break ⁽²⁾	Unconfined Compressive Strength (psi) ⁽³⁾	Young's Modulus (ksi x1000)	Specific Gravity
B-601(DH)	Run 3	601DH-CS-01	39.9	7.19	3.26	2.2	140.6	4.3	COL	4823		
B-601(DH)	Run 4	601DH-CS-02	43.5	7.06	3.26	2.2	130.4	8.4	C	2384		
B-601(DH)	Run 5	601DH-CS-03	50.2	7.19	3.25	2.2	120.4	12.0	S	1962		
B-601(DH)	Run 6	601DH-CS-04	52.0	7.28	3.26	2.2	114.4	17.0	S	1559		
B-601(DH)	Run 9	601DH-CS-05	66.7	7.19	3.27	2.2	119.3	14.2	S	1197		
B-601(DH)	Run 14	601DH-CS-06	92.9	7.26	3.25	2.2	115.5	12.7	S	938		
B-601(DH)	Run 14	601DH-CS-07	94.3	7.14	3.24	2.2	102.0	14.1	S	812		
B-601(DH)	Run 15	601DH-CS-08	99.7	7.16	3.23	2.2	112.9	13.4	S	413 ⁽⁵⁾		
B-602	Run 10	602-CS-01	52.2	4.94	2.37	2.1	110.8	15.8	S	883		
B-602	Run 10	602-CS-02	54.4	5.31	2.40	N/A	94.1	23.2	N/A	(4)		
B-602	Run 16	602-CS-03	79.5	5.04	2.40	2.1	139.8	6.2	S	3665		
B-604(DH)	Run 4	604DH-CS-01	49.8	5.19	2.40	2.2	126.0	12.1	C	4012		
B-604(DH)	Run 4	604DH-CS-02	50.6	5.07	2.40	2.1	123.2	12.1	S	3175		
B-604(DH)	Run 10	604DH-CS-03	80.2	5.03	2.40	2.1	133.5	7.9	S	3183		
B-606	Run 7	606-CS-01	32.0	5.35	2.39	2.2	124.4	11.4	S	1764		
B-606	Run 8	606-CS-02	33.5	5.15	2.40	2.2	114.7	11.9	S	772		
B-606	Run 12	606-CS-04	52.2	5.29	2.40	2.2	144.0	5.6	S	4991		
B-606	Run 18	606-CS-05	74.3	5.25	2.38	2.2	132.1	7.7	S	2188		
B-606	Run 19	606-CS-06	80.1	5.03	2.39	2.1	125.0	8.9	S	2752		
B-607	Run 3	607-CS-01	25.7	5.21	2.39	N/A	103.9	10.6	N/A	(4)		2.65
B-607	Run 5	607-CS-02	33.9	4.92	2.39	2.1	112.1	13.0	S	1559		
B-607	Run 6	607-CS-03	40.7	4.95	2.39	2.1	120.5	10.5	S	1963		
B-607	Run 8	607-CS-04	50.4	4.98	2.39	2.1	123.8	11.8	S	3266		
B-607	Run 10	607-CS-05	58.6	4.98	2.38	2.1	133.9	9.4	S	1418 ⁽⁵⁾		
B-607	Run 19	607-CS-06	99.7	5.02	2.37	2.1	110.1	13.6	S	350		

TABLE 4.3
SUMMARY OF LABORATORY TEST RESULTS - ROCK
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Prepared By JPH 7-24-08
 Checked By ZHU 7/24/08

Boring Number	Run Number	Sample ID	Sample Top Depth (feet)	Sample Length (L) (inches)	Sample Diameter (D) (inches)	L/D Ratio	Unit Weight (pcf) ⁽¹⁾	Moisture Content (%)	Type of Break ⁽²⁾	Unconfined Compressive Strength (psi) ⁽³⁾	Young's Modulus (ksi x1000)	Specific Gravity
B-608(DH)	Run 2	608DH-CS-01	41.3	5.17	2.40	2.2	144.2	4.2	C	5416		
B-608(DH)	Run 3	608DH-CS-02	42.9	5.11	2.41	2.1	142.1	4.4	C	4160		
B-608(DH)	Run 15	608DH-CS-03	105.2	5.06	2.39	2.1	101.5	18.5	S	430		
B-609	Run 1	609-CS-01	29.0	5.24	2.40	2.2	111.4	10.5	S	416		
B-609	Run 1	609-CS-02	30.1	4.99	2.41	2.1	109.4	15.8	S	1494		
B-609	Run 6	609-CS-04	50.1	5.28	2.40	2.2	126.0	10.8	S	2551		
B-609	Run 16	609-CS-06	79.6	5.16	2.38	2.2	127.8	7.9	S	1865		
B-609	Run 22	609-CS-07	101.9	5.20	2.39	2.2	110.3	13.2	S	587		
B-610(DH)	Run 3	610DH-CS-01	27.6	5.12	2.40	2.1	112.7	16.6	S	1239		
B-610(DH)	Run 3	610DH-CS-02	29.6	4.97	2.39	2.1	107.9	20.0	S	1446		
B-610(DH)	Run 7	610DH-CS-04	49.9	5.27	2.41	2.2	125.0	12.4	S	2038	3.7	
B-610(DH)	Run 13	610DH-CS-05	77.6	5.24	2.40	2.2	130.9	8.8	S	3000		
B-611	Run 1	611-CS-01	28.7	5.07	2.39	2.1	120.6	11.9	S	1480		
B-611	Run 3	611-CS-02	36.6	5.36	2.39	2.2	125.1	9.7	S	2806		
B-611	Run 5	611-CS-03	43.7	5.20	2.40	2.2	136.5	5.8	S	3603		
B-611	Run 10	611-CS-05	68.7	5.10	2.39	2.1	142.5	4.1	S	2471		
B-611	Run 15	611-CS-07	92.9	5.30	2.39	N/A	107.1	13.0	N/A	(4)		
B-611	Run 18	611-CS-09	108.7	5.16	2.39	N/A	96.2	22.7	N/A	(4)		
B-614	Run 5	614-CS-02	52.1	5.08	2.40	2.1	122.7	12.9	S	3550		
B-614	Run 11	614-CS-04	83.1	5.06	2.39	2.1	110.8	17.3	S	990		
B-616	Run 2	616-CS-01	36.1	5.01	2.39	2.1	106.2	12.9	S	1050		
B-616	Run 6	616-CS-04	61.2	5.15	2.40	2.1	122.8	10.5	C/S	2245		
B-619	Run 4	619-CS-01	29.0	4.77	2.39	2.0	108.4	20.6	S	935		
B-619	Run 8	619-CS-02	49.4	4.90	2.40	2.0	134.4	6.8	C/S	4413		
B-620(DH)	Run 5	620DH-CS-02	40.6	4.71	2.40	2.0	125.5	11.1	S	2556		
B-620(DH)	Run 6	620DH-CS-03	51.2	5.02	2.41	2.2	122.7	13.7	S	2487	2.9	

MACTEC ENGINEERING AND CONSULTING, INC.
 RALEIGH, NC

Page 2 of 4

TABLE 4.3
SUMMARY OF LABORATORY TEST RESULTS - ROCK
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Prepared By JP 7-24-08
 Checked By EHU 7/24/08

Boring Number	Run Number	Sample ID	Sample Top Depth (feet)	Sample Length (L) (inches)	Sample Diameter (D) (inches)	L/D Ratio	Unit Weight (pcf) ⁽¹⁾	Moisture Content (%)	Type of Break ⁽²⁾	Unconfined Compressive Strength (psi) ⁽³⁾	Young's Modulus (ksi x1000)	Specific Gravity
B-620(DH)	Run 8	620DH-CS-04	61.6	5.25	2.41	2.2	125.5	8.6	S	1356		
B-621	Run 4	621-CS-01	43.8	5.15	2.40	2.2	131.1	7.1	S	3178		
B-621	Run 17	621-CS-04	107.3	5.26	2.40	2.2	96.3	17.9	S	443		
B-701(DH)	Run 3	701DH-CS-01	26.4	7.34	3.26	2.3	104.2	11.7	S	309		
B-701(DH)	Run 6	701DH-CS-02	42.3	7.03	3.24	2.2	141.7	7.1	COL	5665		
B-701(DH)	Run 8	701DH-CS-03	51.8	7.10	3.24	2.2	131.4	8.2	C	2323		
B-701(DH)	Run 10	701DH-CS-04	60.8	7.17	3.26	2.2	133.5	10.1	S	2921		
B-701(DH)	Run 10	701DH-CS-05	62.2	7.14	3.26	2.2	123.0	6.7	S	172		
B-701(DH)	Run 12	701DH-CS-06	74.3	7.20	3.25	2.2	137.7	7.6	S	2099		
B-701(DH)	Run 24	701DH-CS-07	467.7	5.20	2.36	2.2	108.8	20.4	C/S	94		
B-701(DH)	Run 28	701DH-CS-08	487.4	5.18	2.33	2.2	113.8	17.7	C/S	18		
B-701(DH)	Run 32	701DH-CS-10	509.0	3.36	2.37	NA	105.7	20.2	NA	NA		
B-701(DH)	Run 42	701DH-CS-14	556.4	5.11	2.36	2.2	99.9	24.4	C/S	310		
B-701(DH)	Run 51	701DH-CS-17	601.8	4.24	2.35	NA	107.6	19.7	NA	NA		
B-702	Run 8	702-CS-01	70.1	5.26	2.40	2.2	143.7	3.1	S	2976		
B-702	Run 8	702-CS-02	72.0	5.11	2.39	2.1	138.5	6.9	S	2251		
B-702	Run 11	702-CS-03	86.9	5.17	2.39	2.2	133.7	5.5	S	1364		
B-702	Run 14	702-CS-04	102.2	5.17	2.39	NA	104.4	12.5	NA	(4)		
B-708(DH)	Run 3	708DH-CS-01	37.8	5.08	2.40	2.1	134.6	6.3	C	3924		
B-708(DH)	Run 6	708DH-CS-04	50.7	5.24	2.40	2.2	138.8	6.4	S	4414		
B-708(DH)	Run 8	708DH-CS-06	61.4	5.29	2.40	2.2	138.6	5.7	S	4230		
B-708(DH)	Run 16	708DH-CS-07	102.2	5.38	2.39	NA	97.2	12.9	NA	(4)		
B-711	Run 1	711-CS-01	34.1	4.99	2.39	2.1	108.1	14.1	S	907		
B-711	Run 2	711-CS-02	35.6	4.94	2.40	2.1	105.2	13.0	S	1417		
B-711	Run 5	711-CS-03	50.9	4.98	2.39	2.1	135.3	7.3	C/S	4051		
B-711	Run 6	711-CS-04	59.5	5.10	2.39	2.1	132.6	9.0	S	3129		2.68
B-711	Run 7	711-CS-05	60.7	4.98	2.39	2.1	138.9	6.6	S	3194		

TABLE 4.3
SUMMARY OF LABORATORY TEST RESULTS - ROCK
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Prepared By APK-7-24-08
 Checked By Z4u 7/24/08

Boring Number	Run Number	Sample ID	Sample Top Depth (feet)	Sample Length (L) (inches)	Sample Diameter (D) (inches)	L/D Ratio	Unit Weight (pcf) ⁽¹⁾	Moisture Content (%)	Type of Break ⁽²⁾	Unconfined Compressive Strength (psi) ⁽³⁾	Young's Modulus (ksi x1000)	Specific Gravity
B-711	Run 7	711-CS-06	62.0	4.90	2.40	2.0	142.5	5.5	C/S	5031		
B-711	Run 12	711-CS-07	86.7	4.95	2.40	2.1	133.0	7.8	S	1133		
B-711	Run 15	711-CS-08	102.0	5.01	2.40	2.1	99.2	15.0	S	378		
B-711	Run 15	711-CS-09	104.0	4.97	2.39	2.1	102.9	14.4	S	367		
B-715	Run 2	715-CS-01	32.8	5.16	2.36	2.2	130.1	4.5	S	2173		
B-715	Run 4	715-CS-03	42.0	5.15	2.36	2.2	133.7	14.2	S	5831		
B-715	Run 7	715-CS-05	55.4	5.19	2.36	2.2	138.1	8.6	C/S	4062		
B-715	Run 13	715-CS-07	88.0	4.97	2.36	2.1	148.7	3.0	C/S	3485		
B-737	Run 3	737-CS-01	42.7	5.18	2.37	2.2	151.4	3.3	S	7800		
B-737	Run 3	737-CS-02	44.3	5.17	2.36	2.2	149.8	4.0	COL	5112		
(1) Dry Unit Weight. To determine Wet Unit Weight, multiply Dry Unit Weight by 1+Moisture Content (in decimal form). (2) Types of Breaks: COL=Columnar; C=Cone; S=Shear; C/S=Cone/Shear (3) Due to core conditions, it was not feasible to meet preparation methodology and dimensional tolerances of ASTM 4543. Cores were capped gypsum compound for testing. Load direction approximately perpendicular to general bedding. (4) Unable to perform test due to core breaking during capping procedure. (5) Test duration was less than 2 minutes due to a compressive load at failure that was less than anticipated. (6) Reported results represent average of values obtained from three trials. (7) Shaded cells indicate that information not obtained. NA = Not Applicable												

TABLE 4.4
SUMMARY OF COMPRESSIVE STRENGTH
AND ELASTIC MODULI OF INTACT
ROCK CORE - ASTM D 7012-07
 Turkey Point COL Project
 MACTEC Job No. 6468-07-1950

Prepared by: ZHU 7/24/08
 Reviewed by: MM 7/24/08

SAMPLE ID	AS RECEIVED MOISTURE CONTENT	SPECIMEN DIAMETER (INCH)	SPECIMEN HEIGHT (INCH)	L/D Ratio	DIMENSIONAL REQUIREMENTS	DRY UNIT WEIGHT (pcf)	TEST DURATION (TIME TO FAILURE IN MINUTES : SECONDS)	Strain Rate (in/min)	UNCONFINED COMPRESSIVE STRENGTH, (PSI)	TYPE OF BREAK	MOE (ksi x 1000)
B-610 (DH) CS-04 49.9'-50.7'	12.4%	2.41	5.27	2.2	See Note (1)	125.0	2:46	0.03	2,038	SHEAR	3.7
B-620 (DH) CS-03 51.2'-52.0'	13.7%	2.41	5.02	2.1	See Note (1)	122.7	11:00	0.03	2,487	SHEAR	2.9

Note (1): Because of core conditions, preparation according to ASTM D 4543 and achieving dimensional tolerances of ASTM D 4543 was not feasible.
 Cores were capped for testing

Note (2): Material Type: Limestone

Note (3): Confining Pressure: None

Note (4): Laboratory Temperature During Testing was 23.9 degrees Celsius

Note (5): Load Direction approximately perpendicular to general bedding.

Note (6): See individual test sheets for more information.

Note (7): Due to higher than anticipated loads, compressive testing had to be completed using a higher capacity testing frame.

MOE = Modulus of Elasticity

TABLE 4.5
SUMMARY OF LABORATORY TEST RESULTS -
CARBONATE CONTENT
ASTM D 4373-02
TURKEY POINT COL
MACTEC PROJECT NO. 6468-07-1950

Prepared By JP 7-25-08
 Checked By ZHU 7-25-08

Boring No.	Sample No.	Depth (ft.)	Calcite Equivalent (%)
B-601 (DH)	601DH-5	9.7-11.2	93
B-601 (DH)	601DH-18	198.4-199.9	29
B-601 (DH)	601DH-23	248.4-249.9	21
B-603	603-3	5.0-6.5	90
B-603	603-5	10.0-11.5	92
B-603	603-8	120.5-122.0	19
B-603	603-11	136.4-137.9	40
B-605	605-4	7.5-9.0	89
B-605	605-12	119.9-121.4	27
B-605	605-15	131.4-132.9	30
B-605	605-18	144.9-146.4	24
B-605	605-26	184.5-186.0	24
B-605	605-28	194.5-196.0	27
B-607	607-3	5.0-6.5	89
B-607	607-CS-03	25.7-26.5	78*
B-607	607-CS-19	99.7-100.5	81*
B-607	607-9	129.5-131.0	19
B-608 (DH)	608DH-CS-03	105.2-106.0	78*
B-608 (DH)	608DH-17	178.0-179.5	22
B-608 (DH)	608DH-22	228.0-229.5	34
B-619	619-6	12.1-13.6	91
B-619	619-8	121.6-123.1	12
B-701 (DH)	701DH-3	5.1-6.6	92
B-701 (DH)	701DH-CS-02	42.3-43.4	93*
B-701 (DH)	701DH-22	237.5-239.0	20
B-701 (DH)	701DH-CS-07	467.7-468.5	87
B-701 (DH)	701DH-CS-10	509.0-509.8	93
B-701 (DH)	701DH-CS-17	601.8-602.6	78
B-703	703-6	12.3-13.8	89
B-703	703-9 R	118.6-120.1	12
B-703	703-15	148.5-150.0	20

TABLE 4.5
SUMMARY OF LABORATORY TEST RESULTS -
CARBONATE CONTENT
ASTM D 4373-02
TURKEY POINT COL
MACTEC PROJECT NO. 6468-07-1950

Prepared By MA 7-25-08
 Checked By ZHU 7-25-08

Boring No.	Sample No.	Depth (ft.)	Calcite Equivalent (%)
B-704 (DH)	704DH-15	123.0-124.5	12
B-704 (DH)	704DH-21	150.0-151.5	18
B-705	705-4	7.5-9.0	92
B-705	705-14	128.5-130.0	20
B-705	705-24	178.5-180.0	24
B-706	706-2	3.1-4.6	86
B-706	706-6	12.9-14.4	92
B-706	706-11	125.9-127.4	21
B-706	706-15	145.0-146.9	17
B-707	707-6	12.5-14.0	92
B-707	707-14	125.3-126.8	20
B-707	707-18	145.5-147.0	18
B-711	711-3	5.0-6.5	95
B-711	711-CS-01	34.1-34.9	93*
B-711	711-CS-05	60.7-61.5	68*
B-711	711-CS-09	104-104.8	83*
B-711	711-11	120.5-122.0	11
B-715	715-CS-01	32.8-33.6	92*
B-730	730-3	3.9-5.4	91
B-730	730-8	19.6-21.1	89
TP-601	601-1	3.2-5.0	89
TP-701	701-1	3.0-4.5	92

*Value shown is the average of three separate tests.

TABLE 4.6
SUMMARY OF SOIL
CHEMICAL TEST RESULTS
FPL-TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Prepared By: ZHU Date: 7-25-08
 Checked By: WJL Date: 7-25-08

Sample Identification			Natural Moisture (%)	pH	Chloride (mg/kg) SW 846 9056 ⁽²⁾	Sulfate (mg/kg) SW 846 8056 ⁽³⁾
Boring No.	Sample Number	Depth (feet)				
B-601(DH)	601-8	21.4	11.5	8.9	6790	953
B-603	603-3	5.0	18.2	8.4	5430	780
B-605	605-20	154.9	22.2	8.3	5190	1180
B-607	607-10	139.5	19.5	8.4	4490	1140
B-701(DH)	701-1	0	65.4	7.4	70400	7590
B-701(DH)	701-3	5	16.7	8.5	5050	551
B-701(DH)	701-8	115.5	25.6	8.5	4290	560
B-701(DH)	701-12	147.5	30.2	8.3	6960	993
B-703	703-10	123.8	22.1	8.4	4730	974
B-704 (DH)	704-16	128	14.8	8.7	7020	914
B-705	705-11	33.5	19.8	8.7	2540	461
B-706	706-2	3.1	21.4	8.3	8830	1190
B-711	711-12	130.2	21.1	8.3	4430	806
B-715	715-3	5	12.3	8.8	3250	334
B-715	715-11	128.1	26.0	8.4	6090	957

NOTES:

- (1) Tests performed by TESTAMERICA - St. Louis, MO
 (2) SW 846 9056/EPA Method 300.0 (EPA-600 / 4-79-020)
 (3) SW 846 8056/EPA Method 300.0 (EPA-600 / 4-79-020)

TABLE 4.7
SUMMARY OF CONSOLIDATED UNDRAINED
TRIAXIAL COMPRESSION TEST RESULTS
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Prepared By: ZHU Date: 8-19-08
 Checked By: [Signature] Date: 8-19-08

Borehole	Sample No.	Sample Depth (ft)	USCS ⁽¹⁾	Gradation			Atterberg Limits ⁽²⁾		Initial Dry Unit Weight (pcf)	Initial Moisture Content (%)	Triaxial Test Data ⁽³⁾			
				Sand (%)	Silt (%)	Clay (%)	LL (%)	PI (%)			c (ksf)	ϕ (°)	c' (ksf)	ϕ' (°)
B-630	UD 12	178.9	ML	33.0	55.7	11.3	21	1	88.7	30.1	1.88	14	1.7	20
									87.9	31.8				
									87.2	32.2				

Notes: (1) USCS = Unified Soil Classification System

(2) LL=Liquid Limit, PI= Plasticity Index

(3) ϕ = Total stress internal friction angle

ϕ' = Effective stress internal friction angle

c = Total stress cohesion intercept

c' = Effective stress cohesion intercept

TABLE 5.1
SUMMARY OF OBSERVATION WELL DATA
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Well Number	Drilling Method	Borehole Depth (ft)	Well Depth (ft)	Screen Interval (ft bgs)	Coordinates		TOC Elevation	Pad Elevation	Height of Casing (ft ags)	Well Diameter (I.D. in.)	Testing	
					Northing	Easting					Slug Testing	Sampling for Chemistry
OW-606D	Rotary wash	137.0	136.0	125 - 135	396962.8	876712.9	1.6	-1.6	3.2	2		
OW-606L	Rotosonic	110.0	108.0	97 - 107	396979.9	876732.6	1.3	-1.5	2.8	2	✓	✓
OW-606U	Rotosonic	30.2	29.0	18 - 28	396938.0	876734.8	1.4	-1.8	3.2	2	✓	✓
OW-621L	Rotosonic	110.0	109.6	98.6 - 108.6	397364.5	876970.0	3.1	0.1	3.0	2	✓	✓
OW-621U	Rotosonic	30.0	28.4	17.4 - 27.4	397375.8	876930.0	3.9	0.6	3.3	2	✓	✓
OW-636L	Rotary wash	111.0	108.1	97.1 - 107.1	395290.8	877257.2	3.0	-0.4	3.4	2	✓	
OW-636U	Rotary wash	29.8	28.0	17 - 27	395285.8	877215.7	2.8	-0.6	3.4	2	✓	
OW-706D	Rotary wash	138.4	135.1	123.8 - 133.8	396960.1	875864.4	2.2	-1.1	3.3	2		
OW-706L	Rotary wash	112.0	111.0	100 - 110	396978.2	875904.6	2.2	-1.0	3.2	2	✓	✓
OW-706U	Rotary wash	29.0	28.0	17 - 27	396940.1	875895.7	1.7	-1.5	3.2	2	✓	✓
OW-721L	Rotary wash	109.0	107.0	96 - 106	397321.5	876120.3	2.0	-1.2	3.2	2	✓	✓
OW-721U	Rotary wash	26.0	25.0	14 - 24	397361.2	876121.4	2.0	-1.1	3.1	2	✓	✓
OW-735L	Rotary wash	110.0	107.9	96.9 - 106.9	395824.3	875669.6	2.7	-0.7	3.4	2	✓	
OW-735U	Rotary wash	28.0	27.0	16 - 26	395823.3	875709.2	2.8	-0.5	3.3	2	✓	✓
OW-802L	Rock coring	110.0	109.0	98 - 108	398817.1	876265.7	2.1	-1.2	3.3	2	✓	
OW-802U	Rotary wash	27.0	26.0	15 - 25	398820.2	876243.7	2.2	-1.2	3.4	2	✓	✓
OW-805L	Rock coring	97.0	96.0	85 - 95	396883.0	877239.5	2.2	-1.5	3.7	2	✓	
OW-805U	Rotary wash	30.0	29.0	18 - 28	396842.8	877240.9	1.2	-1.6	2.8	2	✓	✓
OW-809L	Rotary wash	110.0	106.5	95.5 - 105.5	397007.9	875152.3	2.4	-0.9	3.3	2	✓	
OW-809U	Rotary wash	27.0	26.0	15 - 25	397045.8	875152.4	2.5	-0.7	3.2	2	✓	✓
OW-812L	Rotary wash	109.0	108.0	97 - 107	398892.8	875045.5	2.1	-1.2	3.3	2	✓	
OW-812U	Rotary wash	27.0	26.0	15 - 25	398933.9	875043.5	2.2	-0.8	3.0	2	✓	

ft bgs = feet below ground surface
ft ags = feet above ground surface
Northings and Eastings provided in US feet (NAD83)
Elevations in feet (NAVD88)

Prepared by:

WSE

Date:

7-23-08

Checked by:

CBS

Date:

7/23/08

TABLE 5.2
SUMARY OF GROUNDWATER FIELD MEASUREMENTS
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Well ID	Sample Date	Temperature (°C)	pH (S.U.)	Dissolved Oxygen (mg/L)	Specific Conductivity (mS/cm)	Turbidity (NTU)	O.R.P. (mV)
OW-606L	5/28/2008	28.29	7.08	9.92	52.8	0.77	-370
OW-606U	5/28/2008	28.71	6.84	1.66	66.9	0.34	-344
OW-621L	6/4/2008	27.80	7.06	1.66	>99.9	0.21	-349
OW-621U	5/29/2008	27.82	7.08	0.05	91.0	2.91	-351
OW-706L	5/29/2008	29.61	6.83	1.49	46.4	0.20	-351
OW-706U	5/29/2008	30.85	6.65	1.13	76.6	0.83	-392
OW-721L	5/28/2008	28.56	6.76	1.18	74.3	7.55	-370
OW-721U	5/28/2008	28.92	7.10	10.6	53.1	0.36	-364
OW-735U	5/27/2008	29.47	7.00	0.02	86.6	0.92	-360
OW-802U	6/5/2008	28.27	6.80	1.90	82.8	0.48	-322
OW-805U	6/5/2008	28.26	7.10	1.19	60.9	0.32	-346
OW-809U	5/27/2008	30.82	6.98	0.01	83.9	0.97	-371

Observation wells purged in accordance with ASTM D 6452-99. Field parameters reported for the final stablization reading.

Prepared by: WSE

Date: 7-23-08

Checked by: CBS

Date: 7/23/08

TABLE 5.3
SUMMARY OF GROUNDWATER TEST RESULTS
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Analytical Method →		160.1	6020C								300.0						310.1 - Alkalinity		SM 18 2320B	350.1	SM18 1030F & API
Constituent →		TDS	Calcium	Iron	Magnesium	Manganese	Potassium	Silica	Silicon	Sodium	Bromide	Chloride	Fluoride	Sulfate	Nitrate	Nitrite	Bicarbonate	Carbonate	Total Alkalinity	Ammonia*	Ion Balance Difference
Well ID	Date Collected	mg/L	µg/L								mg/L						mg/L		mg/L	µg/L	%
OW-606L	5/28/2008	49,100	632,000 N	<50U	1,880,000 N	39.1	549,000 N	2,630	<250,000 N	15,100,000 N	62.5	29,600	<20.0	3,860	<0.20	<200	8.2	<5.0	165	1,580	3.2
OW-606U	5/28/2008	43,100	535,000 N	318 NB	1,730,000 N	35.4	525,000 N	729	<250,000 N	14,400,000 N	56.6	27,900	<20.0	3,470	<0.20	<200	7.8	<5.0	155	844	2.7
OW-621L	6/4/2008	52,800	574,000 N	<50,000 N	1,960,000 N	<2,000 N	586,000 N	133,000 JB	62,100 JBN	16,300,000 N	65.9	31,300 B	<20.0	3,610	<0.20	<200	181	<5.0	181	1,300	2.8
OW-621U	5/29/2008	19400 ^R	492,000 N	453 NB	1,600,000 N	36.8	476,000 N	637	<250,000 N	13,100,000 N	50.6	25,500	<1.0	3,210	<4.0	<200	9.4	<5.0	189	588	2.7
OW-706L	5/29/2008	17400 ^R	413,000 N	531 NB	1,170,000 N	8.3	327,000 N	7,560	<250,000 N	9,440,000 N	37.7 J	19,100	<1.0	2,280	<4.0	<200	9.6	<5.0	191	611	4.0
OW-706U	5/29/2008	40,500	725,000 N	178 NB	2,150,000 N	43.5	658,000 N	1,840	<250,000 N	17,500,000 N	70.5	33,300	<1.0	3,850	<4.0	<200	10.2	<5.0	204	2,090	1.1
OW-721L	5/28/2008	54,600	667,000 N	362 NB	2,020,000 N	46.2	587,000 N	3,170	<250,000 N	16,300,000 N	64.9	31,100	<20.0	3,990	<0.20	<200	9.0	<5.0	180	1,820	1.7
OW-721U	5/28/2008	45,400	603,000 N	329 NB	1,890,000 N	58.1	569,000 N	848	<250,000 N	15,400,000 N	60.1	29,900	<20.0	3,860	<0.20	<200	8.2	<5.0	164	1,680	2.8
OW-735U	5/27/2008	40,200 ^I	749,000 N	133 NB	2,140,000 N	32.7	655,000 N	<250	<250,000 N	17,700,000 N	262	37,500	<20.0	4,090	<4.0	<200	179	<5.0	179	2,150	6.7
OW-802U	6/5/2008	53,900	579,000 N	<50,000 N	1,980,000 N	<2,000 N	586,000 N	143,000 J	66,700 JN	16,400,000 N	65.1	31,600 B	<20.0	3,720	<0.20	<200	178	<5.0	178	1,400	3.0
OW-805U	6/5/2008	45,700	447,000 N	<50,000 N	1,570,000 N	<2,000 N	493,000 N	107,000 J	49,900 JN	13,200,000 N	53.6	27,600 B	<20.0	3,070	<0.20	<200	177	<5.0	177	548	6.9
OW-809U	5/27/2008	34,800 ^{IR}	704,000 N	158 NB	2,040,000 N	28.1	607,000 N	<250	<250,000 N	16,700,000 N	241 J	35,900	<1.0	4,050	<4.0	<200	177	<5.0	177	2,210	7.4

* = Test conducted on Nitrogen, as Ammonia.
< # = Indicates analyte not detected at or above the method detection limit.
<50U = Indicates analyte detected in the associated method blank at a concentration between the method detection limit and quantitation limit. Based on EPA 540-R-04-004, this result has been flagged as "non-detect" at the quantitation limit.
N = Spiked analyte recovery is outside stated control limits. Method performance confirmed using Laboratory Control Spike sample results.
J = Estimated result. Result is less than the reporting limit.
B = Method blank contamination. The associated method blank contains the target analyte at a reportable level. These data should be used with caution.
^I = Because the initial results exceeded the SOP limits for this test, the samples were diluted and re-analyzed. Re-analysis was conducted out of hold time.
^R = indicates result has been rejected during data review process (see Section 5.5 for discussion). These results are not considered valid and should not be used.

Prepared by: WSD Date: 6-3-08

Checked by: RAK Date: 10/3/08

TABLE 5.4
IN-SITU RECOVERY TESTING SUMMARY (ASTM D 4044-96(02))
TURKEY POINT COL PROJECT
MACTEC PROJECT NO. 6468-07-1950

Slug Test ID	Test Date	Borehole Depth (ft bgs)	TOC Elevation (ft NAVD 88)	Filter-Pack Interval (ft bgs)	Screen Interval (ft bgs)	Falling Head Test Results in ft/day ¹				Rising Head Test Results in ft/day ¹			
						Butler	KGS	McElwee-Zenner	Springer-Gelhar	Butler	KGS	McElwee-Zenner	Springer-Gelhar
OW-606 U	5/20/2008	30.17	1.4	15-30.17	18 -28	Falling head test not conducted due to pneumatic testing method					9.80E+01		1.35E+02
OW-606 U Test 2	5/20/2008	30.17	1.4	15-30.17	18 -28	Falling head test not conducted due to pneumatic testing method					9.20E+01		1.23E+02
OW-606 L	5/18/2008	109.00	1.3	92.8-109	97 - 107	1.20E+02		1.18E+02		3.02E+01	3.50E+01		
OW-606 L	5/20/2008	109.00	1.3	92.8-109	97 - 107	Falling head test not conducted due to pneumatic testing method				6.74E+01		6.61E+01	
OW-621 U	5/20/2008	30.00	3.9	14.4-30	17.4 - 27.4	Falling head test not conducted due to pneumatic testing method					9.44E+01		6.89E+01
OW-621 L	5/17/2008	110.00	3.1	95-110	98.6 - 108.6	9.16E+01	7.13E+01			3.11E+01	3.33E+01		
OW-621 L Test 2	5/17/2008	110.00	3.1	95-110	98.6 - 108.6	Falling Head test not conducted				3.57E+01	3.04E+01		
OW-621 L	5/20/2008	110.00	3.1	95-110	98.6 - 108.6	Falling head test not conducted due to pneumatic testing method				1.67E+01	1.66E+01		
OW-636 U	5/21/2008	29.80	3	12.8-29.8	17 - 27	Falling head test not conducted due to pneumatic testing method					5.73E+01		5.06E+01
OW-636 U Test 2	5/21/2008	29.80	3	12.8-29.8	17 - 27	Falling head test not conducted due to pneumatic testing method					7.93E+01		6.43E+01
OW-636 L	5/21/2008	111.00	2.8	93.5-111	97.1 - 107.1	Falling head test not conducted due to pneumatic testing method				1.01E+01	1.06E+01		
OW-636 L Test 2	5/21/2008	111.00	2.8	93.5-111	97.1 - 107.1	Falling head test not conducted due to pneumatic testing method				9.43E+00	1.00E+01		
OW-706 U	5/16/2008	29.00	1.7	13.4-29	17 - 27		6.42E+00		8.38E+01		3.12E+01		3.03E+01
OW-706 U	5/20/2008	29.00	1.7	13.4-29	17 - 27	Falling head test not conducted due to pneumatic testing method					7.61E+01		7.02E+01
OW-706 L	5/16/2008	112.00	2.2	96.85-112	100 - 110	2.12E+01	2.19E+01			2.42E+01	2.60E+01		
OW-721 U	5/15/2008	26.00	2	9.9-26	14 - 24		4.55E+01		4.55E+01		3.25E+01		2.70E+01
OW-721 U	5/20/2008	26.00	2	9.9-26	14 - 24	Falling head test not conducted due to pneumatic testing method					3.25E+01		2.44E+01
OW-721 L	5/15/2008	109.00	2	92-109	96 - 106	2.73E+00	1.13E+00			1.16E+01	2.91E+00		
OW-721 L	5/20/2008	109.00	2	92-109	96 - 106	Falling head test not conducted due to pneumatic testing method				2.84E+00	1.33E+00		
OW-735 U	5/15/2008	28.00	2.8	12-16	16 - 26		1.10E+02		3.19E+02		8.47E+01		5.82E+01
OW-735 U	5/20/2008	28.00	2.8	12-16	16 - 26	Falling head test not conducted due to pneumatic testing method					7.07E+01		8.02E+01
OW-735 L	5/15/2008	110.00	2.7	92.3-110	96.9 - 106.9	4.91E+01	2.06E+01			4.20E+01	3.21E+01		
OW-802 U	5/20/2008	27.00	2.2	10-17	15 - 25	Falling head test not conducted due to pneumatic testing method					4.11E+01		3.19E+01
OW-802 L	5/20/2008	110.00	2.1	93-110	98 - 108	Falling head test not conducted due to pneumatic testing method				2.33E+01	3.10E+01		
OW-805 U	6/6/2008	30.00	1.2	13-17	18 - 28	Falling head test not conducted due to pneumatic testing method				1.36E+02	1.02E+02		1.07E+02
OW-805 L	6/6/2008	97.00	2.2	80-97	85 - 95	Falling head test not conducted due to pneumatic testing method				5.27E+00	5.94E+00		
OW-809 U	5/15/2008	27.00	2.5	12.6-27	15 - 25		1.03E+02		9.12E+01		8.23E+01		6.07E+01
OW-809 U	5/20/2008	27.00	2.5	12.6-27	15 - 25	Falling head test not conducted due to pneumatic testing method					3.59E+01		2.69E+01
OW-809 L	5/15/2008	110.00	2.4	91-110	95.5 - 105.5	1.04E+02	1.09E+02			3.34E+01	3.66E+01		
OW-812 U	5/20/2008	27.00	2.2	11-27	15 - 25	Falling head test not conducted due to pneumatic testing method					3.12E+01		2.45E+01
OW-812 L	5/20/2008	109.00	2.1	94-109	97 - 107	Falling head test not conducted due to pneumatic testing method				2.10E+01	2.12E+01		

ft bgs = feet below ground surface

ft NAVD 88 = feet relative to North American Vertical Datum of 1988

Slug tests conducted in accordance with ASTM D 4044-96 (2002)

Indicates test not analyzed by the referenced method

¹ = Hydraulic conductivity estimates determined from slug tests analyses are likely biased low, and are not representative of the hydrogeologic units tested. (Please see discussion in text Section 5.6).

Prepared by: WSC

Date: 10-8-08

Checked by: De

Date: 10/8/08

**FINAL DATA REPORT Rev. 2
GEOTECHNICAL EXPLORATION AND TESTING**

**TURKEY POINT COL PROJECT
FLORIDA CITY, FLORIDA**

October 6, 2008

**VOLUME 1
Figures**

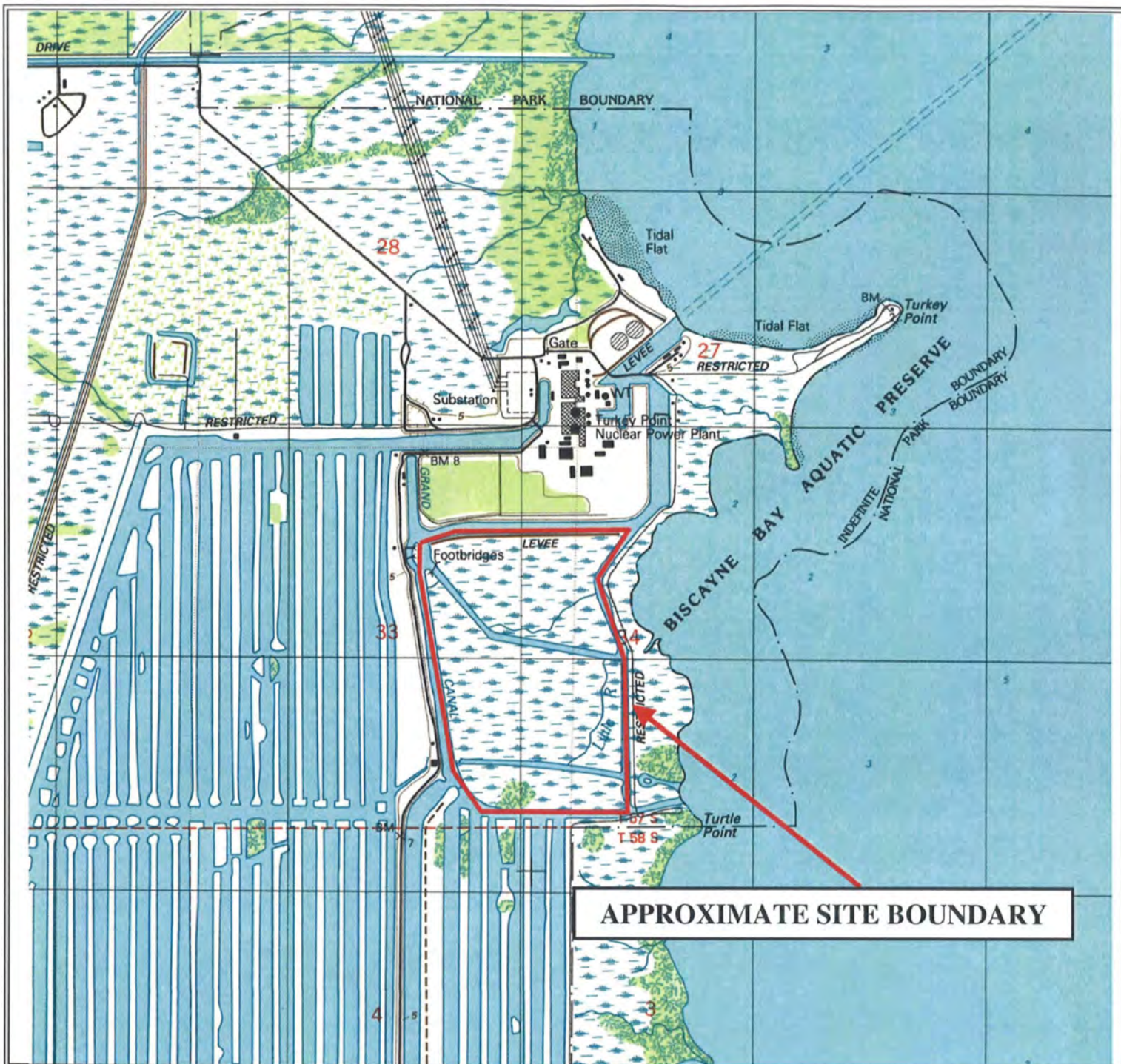
Prepared By:

**MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina**

MACTEC Project No. 6468-07-1950

Prepared For:

**Bechtel Power Corporation
Subcontract No. 25409-102-HC4-CY00-00001**



ARSENICKER KEYS, FLA.

1997

NIMA 4934 IV NE-SERIES V847



NORTH

NOTE: SITE LOCATION IS APPROXIMATE

SITE VICINITY MAP
TURKEY POINT COL PROJECT
FLORIDA CITY, FLORIDA

MACTEC

MACTEC ENGINEERING AND CONSULTING, INC.
3301 ATLANTIC AVENUE
RALEIGH, NORTH CAROLINA 27604

DRAWN: WSG	DATE: MAY 2008	FIGURE
ENG CHECK: <i>WBS</i>	SCALE: 1 : 24000	1
APPROVAL: <i>AS</i>	JOB: 6468-07-1950 DCN# TUR512	

**FINAL DATA REPORT Rev. 2
GEOTECHNICAL EXPLORATION AND TESTING**

**TURKEY POINT COL PROJECT
FLORIDA CITY, FLORIDA**

October 6, 2008

**VOLUME 1
References**

Prepared By:

**MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina**

MACTEC Project No. 6468-07-1950

Prepared For:

**Bechtel Power Corporation
Subcontract No. 25409-102-HC4-CY00-00001**

DRILLED SHAFT DESIGN
AND
CONSTRUCTION IN FLORIDA

BY:

BILL C. MCMAHAN, JR.

INDEPENDENT STUDY PROJECT
UNIVERSITY OF FLORIDA

August 18, 1988

Note: Only relevant portions of this report are presented.

TABLE OF CONTENTS

1.0	Overview	1
2.0	Case Study: Drilled Shafts in Tampa	2
2.1	Background	2
2.2	Subsurface Conditions	3
2.3	Shaft Design	5
2.3.1	Overview of Design Approaches	5
2.3.2	Design Approach: Convention Center Test Shafts	9
2.3.2.1	Design of Test Shaft 81 and Reaction Shafts	9
2.3.2.2	Design of Test Shaft 102 and Reaction Shafts	20
2.4	Shaft Installation and Construction	21
2.4.1	Installation of Test Shaft 1 and Reaction Shafts	22
2.4.2	Installation of Test Shaft 2 and Reaction Shafts	23
2.5	Pier Load Tests and Results	28
2.5.1	Load Test 1 Results	28
2.5.2	Load Test 2 Results	30
3.0	Closure	31

LIST OF FIGURES

FIGURE	DESCRIPTION	PAGE
1	Generalized Subsurface Profile at Convention Center	4
2	Test Pier Location Plan	11
3	Photo Essay: Tooling Up	24
4	Photo Essay: Drilling Shaft with Earth Auger, Muddied Slurry and Surface Casing	25
5	Photo Essay: Cleaning Excavation with Bailer Bucket	26
6	Photo Essay: Inserting Instrument Cage into Shaft ...	27
7	Photo Essay: Concrete Placement with a Tremie Pipe ..	28
8	Photo Essay: Finished Shaft with Tell Tales	29
9	Photo Essay: Load Test Set-up: RXN Frame	30
10	Photo Essay: Load Test Instrumentation	31

LIST OF TABLES

TABLE	DESCRIPTION	PAGE
1	N-Value Correlation to Shear Strength Parameters	8
2	Summary of Pilot Boring Data: Load Test #1	12
3	Summary of Pilot Boring Data: Load Test #2	13

DRILLED SHAFT DESIGN AND CONSTRUCTION IN FLORIDA

1.0 Overview

Drilled shafts have been used throughout the the world in applications requiring moderate to high tension, compression or lateral capacities. Drilled shafts may be comparatively more expensive (on a unit cost basis) than other deep foundation systems. However, in many instances, the total foundation costs associated with driven pile or other deep foundation systems may exceed those for the drilled shaft foundation. The key factors which affect cost effectiveness of drilled shaft foundations are the type and magnitude of structural loads, the depth of suitable bearing strata, and construction related considerations.

Drilled shafts are desirable when it is necessary to support high tension and compression loads. In many instances one drilled shaft can replace an entire pile cap of lower capacity piles. For instance a single 3- to 4-foot diameter shaft rock socketed into the Florida Limestone Formation may safely carry 1,000 to 2,000 kips (or more) in compression and 500 to 1,000 kips in tension. The same compression loads would require five to ten 200 kip piles. Ten to twenty piles would be required to provide 500 to 100 kips tension capacity. Drilled shafts can also provide significant lateral capacity thereby reducing the number

of foundation elements required. The reduction of foundation members and the elimination of the pile cap (in some applications) usually results in cost savings and better production rates.

Design and construction of drilled shafts in Florida varies significantly across the state. In some parts of the state, drilled shafts are designed based on a combination of sidewall shear (rock socket shear) and end bearing resistance. In other portions of the state, soil and groundwater conditions preclude consideration of shaft end bearing capacity. The remainder of this paper presents drilled shaft design and construction techniques used by Law Engineering in Tampa, Florida. A case study for a recent project is also presented.

2.0 Case Study: Drilled Shafts in Tampa

2.1 Background

A new convention center in Tampa is being founded on a combination of drilled shafts and driven prestressed concrete piles. The foundation system includes 1,500 piles and 70 shafts. Planned drilled shaft capacities range from 200 to 2,000 kips. Three- to four-foot diameter shafts with 10- to 30-foot rock socket lengths are being installed. The driven pile system is more cost effective in this application; however, drilled shafts

are required to minimize vibrations adjacent a 54-inch diameter force main which lies near the building perimeter.

The convention center site is located next to the Hillsborough River in Downtown Tampa. The site was dredge filled many years ago, and significant deposits of bay bottom silts and clays underlie the generally sandy dredge fill. A geotechnical exploration at the site included standard penetration test borings both on land and over water. A rock coring program was also conducted to obtain core samples of more competent zones of the limestone formation. The generalized subsurface profile is presented on Figure 1. Detailed discussions of Geology in the Tampa area are presented in other publications (McMahan 88, Stone 87). However, a brief discussion of the subsurface conditions at the convention center site is presented below.

2.2 Subsurface Conditions

The profile consists of 15 to 20 feet of sands, underlain by bay bottom silts and clays which overlie the limestone formation. The formation is characterized as variably indurated sandy calcareous clays and silts with occasional thin layers of chert. Standard penetration resistance (N-values) in the more cemented lenses range from 50 blows/foot to 50 blows/inch. Less cemented, more earthen zones exhibit typical standard penetration

resistances less than 50 blows/ft.

Direct inspection of limestone cuts indicate that the Tampa Limestone Formation has slots, pits, and voids, which are filled with very soft soils. The anomalies in the limestone formation are represented on the borings as zones which exhibit N-values less than 1 blow/foot or drilling fluid losses. The voids and slots are generally concentrated within the upper portion of the formation and generally discontinuous. The primary and secondary porosity of the limestone formation result in a relatively pervious formation. In fact, the limestone formation is part of the Floridian aquifer.

2.3 Shaft Design

2.3.1 Overview of Design Approaches

Moderate to high capacity drilled shafts in Tampa are founded in the Tampa Limestone Formation. The shaft capacity is based only on sidewall shear. End bearing is neglected because shafts in Tampa are installed using wet methods of construction. Since the shaft bottom is not available for inspection, the engineer cannot be certain that the shaft excavation is thoroughly cleaned prior to concreting the shaft. Therefore, end bearing resistance is neglected from capacity calculations, but it is considered as a redundant design feature (i.e., an extra factor of safety).

There are at least two alternative design methods used to predict shaft capacity, and both neglect endbearing affects. One approach uses strain compatibility (load transfer) analytical techniques, and the other uses and allowable average sidewall shear strength values. In each method, special considerations are made which account for the variability and inhomogeneity of the bearing stratum.

The first step in shaft capacity design typically includes performing standard penetration soil test borings across the site, selecting an area of the site which exhibits typical subsurface conditions, and performing pilot borings (timed drilling using a Nx tricone roller bit) adjacent to typical standard penetration test borings. The pilot borings give a more comprehensive view of rock quality versus depth. The drill rates obtained, however, are strongly influenced by the drill rig characteristics, the crowd down pressure, and the condition and dimensions of the drilling equipment. For these reasons, pilot borings are typically correlated to N-values for each specific project and drill rig.

Semi-empirical correlations have been developed between load transfer strength parameters and N-values. A similar correlation

has been developed between N-values and allowable sidewall shear values. Both correlations have been load test verified. Typical correlations are presented on Table 1.

When the strain compatibility approach is used, the pilot boring information obtained at each shaft location is evaluated using a load transfer/strain compatibility computer program. Shaft socket length is determined based on design shaft loads. Load transfer functions required as input into the computer program are developed using the N-value correlations. The advantages of the strain compatibility approach is that both capacity and settlement estimates are generated. Furthermore, the strain compatibility method accounts for the layered limestone strata, with differing load transfer characteristics. The prime disadvantage of the approach is that its use in the field during construction is limited because access to a computer is limited.

When the allowable sidewall shear approach is used, a representative shear value is selected based on N-values and correlated to drilling time. A minimum drilling time representing the allowable shear value is selected and each pilot boring is evaluated by assuming that no side wall shear transfer occurs in zones exhibiting drill rates less than the target drilling time. Additionally, no shear transfer is considered in

TABLE 1: N-VALUE SHEAR PARAMETER CORRELATION

MATERIAL	LOAD TRANSFER PARAMETERS		AVERAGE ALLOWABLE SHEAR
Soft limestone (10 < N < 20)	Peak shear strength	5 ksf	3 ksf
	Residual shear strength	0.5 ksf	
	Movement to mobilize peak shear	0.2 in.	
Medium limestone (20 < N < 50)	Peak shear strength	10 ksf	5 ksf
	Residual shear strength	1 ksf	
	Movement to mobilize peak shear	0.2 in.	
Hard limestone (50 < N < 50/3")	Peak shear strength	20 ksf	7.5 ksf
	Residual shear strength	2 ksf	
	Movement to mobilize peak shear	0.1 in.	
Very hard limestone (50/3" < N)	Peak shear strength	30 ksf	10 ksf
	Residual shear strength	3 ksf	
	Movement to mobilize peak shear	0.1 in.	

the sandy overburden soils. All zones exhibiting timed drill rates greater than the target drill time are assigned the allowable sidewall shear value.

The design procedures outlined above are sometimes verified using reduced scale or full scale load tests. However, most small jobs omit the very expensive load test program and conservative design parameters are assumed to increase the level of comfort.

2.3.2 Design Approach: Convention Center Test Shafts

The test shaft socket lengths and capacities were determined using the allowable sidewall shear approach and were compared against the capacity based on the strain compatibility method of analysis. Both approaches yielded similar capacity shafts for a given socket length. The strain compatibility approach yielded slightly more conservative capacities. However, since, the allowable sidewall shear approach is less complex, this design method was implemented in order to facilitate field inspection.

2.3.2.1 Design of Test Shaft #1 and Reaction Shafts

Reaction shafts were selected in production pier locations and were sized to carry approximately 450 tons of tension. They were drilled to depths of approximately 40 and 42 feet below existing grade (tip elevations approximately +54.5 and +52.0 feet

**FINAL DATA REPORT Rev. 2
GEOTECHNICAL EXPLORATION AND TESTING**

**TURKEY POINT COL PROJECT
FLORIDA CITY, FLORIDA**

October 6, 2008

**VOLUME 1
Appendix A – Survey Report**

Prepared By:

**MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina**

MACTEC Project No. 6468-07-1950

Prepared For:

**Bechtel Power Corporation
Subcontract No. 25409-102-HC4-CY00-00001**

MACTEC ENGINEERING AND CONSULTING, INC.

**SURVEYOR'S REPORT
OF**

**AS-BUILT SURVEY OF GEOTECHNICAL INVESTIGATION SITES
AT TURKEY POINT NUCLEAR PLANT, PROPOSED UNITS 6 AND 7
MIAMI-DADE COUNTY, FL**

MACTEC Project number 6468-07-1950

As part of the project assignment MACTEC was responsible for the as-built locations of all geotechnical investigation sites at the Turkey Point Nuclear Plant, proposed Units 6&7, known as the Island Site. The geotechnical investigation sites consisted of soil boring sites, ground water observation sites, cone penetration test sites and test pits staked and drilled by MACTEC. This surveyor's report lists the geographical locations and elevations of the geotechnical investigation sites and provides information as to horizontal and vertical datum's, survey control points, and procedures and equipment utilized in the course of the survey.

Horizontal and Vertical Datums

The horizontal locations of all geotechnical investigation sites are relative to the North American Datum of 1983/ 1990 adjustment (NAD83/90) with the values expressed in Florida State Plane Coordinates (FSPC), Florida East, Zone 901, expressed in US feet.

The elevations of all of the geotechnical investigation sites are relative to the North American Vertical Datum of 1988 (NAVD88) expressed in US feet.

Primary Control from which As-built Survey is based

To support the needs of this assignment as well as establish survey control for future work at the Island Site, two (2) primary control stations were established in the course of this survey. The control stations, known as CRC1 and CRC2 are located immediately west of the Island Site on the west side of the perimeter canal and roadway. The control stations are poured-in-place concrete monuments with brass discs stamped "CRC1 2007" and "CRC2 2007" respectively.

Geographical positions for the primary control stations were established utilizing Global Positioning System (GPS) static measurement procedures. GPS observations were conducted using three Trimble Navigation, Ltd. dual-frequency receivers

(one model 5800 and two model 5700) on January 17-19, 2008. Observations were made to primary control stations CRC1 and CRC2 as well as to National Geodetic Survey (NGS) geodetic control stations "FIRE", "QUARRY_2" and "TURKEY POINT RM3" (go to www.ngs.noaa.gov for additional information regarding the NGS control stations). Measured vectors were processed daily and loop closures were performed for evaluation of data. After loop closures were performed, a free adjustment was made. A single point was held fixed in X, Y and Z coordinate values. Misclosures were calculated for each of the other control points and outliers flagged for further evaluation. Any suspect values were remeasured to ensure that any abnormalities were not caused by poor baseline data. Each point in the network was occupied multiple times during different satellite constellations. Vectors used in the final constrained adjustment are independent, non-trivial vectors. Network adjustments were conducted using GeoLab 2001.90.20.20.0 .

Elevations for the primary control stations were established by differential leveling from NGS benchmarks "Y 314", "A 316" and "LM 18 316 FPLCO" (go to www.ngs.noaa.gov for additional information regarding NGS benchmarks). A Zeiss DiNi21 Digital level with matching level rods was utilized for this assignment. The instrument was calibrated using the Kukkamaki Method prior to initiating the level runs. All level runs originated and closed on NGS benchmarks and utilized 3rd order leveling procedures. The data collected in the course of the level runs was reduced and adjusted utilizing STAR*LEV Adjustment software, Version 1.30 . Results yielded 3rd order accuracies.

The listing below provides geographic positions and elevations for the primary control stations utilized in the course of performing the As-built survey.

Primary Station	FSPC Feet (NAD83/90)		Elevation Feet (NAVD88)
	Northing	Easting	
CRC1	398398.35	874595.10	4.58
CRC2	397319.37	874826.93	3.68

Performing the As-built Survey

The As-built survey of the geotechnical investigation sites was made utilizing GPS technology operating in Real Time Kinematic (RTK) mode. Utilizing the above referenced primary control stations, a Trimble Navigation Ltd. Model 5700 GPS-RTK dual-frequency receiver system was used to collect the survey data. A base station with fixed height tripod was set on primary control station CRC2 as the basis for measurements. The rover unit, with fixed height bipod, was used to acquire the data by visiting each geotechnical investigation site. Before and after each measurement session a "check" measurement was made by the rover unit at primary control station CRC1 to verify the values being obtained in the measurement process.

A measurement was made at each geotechnical investigation site on two separate occasions as a quality control procedure. Acceptable measurements were averaged to develop final coordinate and elevation values.

Listed on Attachment A are the Florida State Plane Coordinates (North American Datum of 1983/Adjustment of 1990, Florida East, Zone 0901, US feet) and elevations (North American Vertical Datum 1988, US feet) for each geotechnical investigation site. The coordinates and elevations for the borings, cone penetration and test pits were measured at the center of the hole or pit. The coordinates and elevations for each observation well were measured at both the northeast corner of the concrete pad surrounding the well site as well as the top of the PVC pipe (north side of pipe with notch or mark) located inside the well casing. This survey is certified as meeting the project specification to locate the borings and other geotechnical exploration points to the nearest 0.5' horizontally and the vertical accuracy to the nearest 0.1'.

Surveyors Notes

- 1) Copies of this Surveyor's Report are not valid with out the signature and original embossed seal of the Florida Registered Land Surveyor in responsible charge.
- 2) Last date in field: June 24, 2008
- 3) Field Book : 978

For the Firm,
MACTEC Engineering and Consulting, Inc.



Robert M. Jones, PLS.
Florida Registered Land Surveyor
License No. 004201

MACTEC Engineering and Consulting, Inc.
4150 North John Young Parkway
Orlando, FL 32804
407.522.7570 407.522.7576 (fax)
Certificate of Authorization 6969

Summary of Locations and Elevations of Geotechnical Investigation Sites

surveys made between April 21, 2008 and June 24, 2008

State Plane Coordinates, North American Datum of 1983/ Adjustment of 1990, Florida East, Zone 0901, US Feet				
Elevations (North American Vertical Datum of 1988, US Feet)				
Name	Comments	Northing	Easting	Elevation
Borings				
B - 601 (DH)		396967.9	876642.9	-1.4
B - 602		397019.6	876594.1	-1.4
B - 603		397018.4	876697.0	-1.4
B - 604 (DH)		396915.9	876591.6	-1.5
B - 605		396916.8	876694.1	-1.7
B - 606		396958.9	876738.0	-1.4
B - 607		396830.0	876644.2	-1.5
B - 608 (DH)		396829.5	876735.9	-1.5
B - 609		396762.5	876689.0	-1.5
B - 610 (DH)		397084.2	876644.4	-1.4
B - 611		397086.7	876735.0	-1.5
B - 612		397085.5	876869.1	-1.5
B - 613		397162.2	876809.4	-1.4
B - 614		397204.1	876870.7	-1.5
B - 615		397167.4	876761.8	-1.5
B - 616		397207.9	876723.7	-1.2
B - 617		397288.1	876721.7	-1.4
B - 618		397207.6	876643.1	-1.4
B - 619		397293.9	876653.7	-1.7
B - 620 (DH)		397394.9	876648.3	-1.5
B - 621		397367.6	876949.3	0.2
B - 622		397421.2	876810.7	0.2
B - 623		397422.6	876523.2	-1.3
B - 624		397327.1	876514.1	-1.4
B - 625		397106.5	876960.5	-1.4
B - 626		396874.5	876857.2	-1.6
B - 627		396835.2	876332.9	-1.3
B - 628		397072.9	876473.2	-1.5
B - 629		396971.9	876346.1	-1.1
B - 630		396871.5	876462.1	-1.5

***Summary of Locations and Elevations of
Geotechnical Investigation Sites***

surveys made between April 21, 2008 and June 24, 2008

B - 631		396655.1	876514.1	-1.2
B - 632		396432.4	876737.0	-1.6
B - 633		396113.3	876993.9	-1.5
B - 634		395758.2	876677.2	-0.7
B - 635		395770.9	876798.2	-0.9
B - 636		395714.8	877193.2	-1.1
B - 637		395693.1	877310.3	-0.2
B - 639		396963.5	876998.2	-1.4
B - 640 (DHT)	also known as C - 602 A	397116.6	876528.3	-0.3
B - 701 (DH)		396976.1	875792.3	-1.1
B - 702		397017.9	875745.9	-1.2
B - 703		397018.1	875846.1	-1.3
B - 704 (DH)		396930.7	875741.7	-1.4
B - 704 G (DH)		396938.6	875749.0	-1.3
B - 705		396919.2	875846.4	-1.3
B - 706		396962.5	875885.3	-1.2
B - 707		396828.8	875790.8	-1.8
B - 708 (DH)		396829.7	875885.7	-1.4
B - 709		396760.5	875840.6	-1.3
B - 710 (DH)		397086.9	875792.9	-1.3
B - 710 (DH) R		397087.15	875781.85	-1.3
B - 710 G (DH)		397075.1	875792.2	-1.4
B - 711		397085.6	875884.8	-1.1
B - 712		397082.1	876022.1	-1.1
B - 713		397179.3	875959.0	-1.1
B - 714		397258.7	876020.6	-1.0
B - 715		397259.2	875908.5	-0.9
B - 716		397214.3	875872.7	-1.1
B - 717		397287.0	875873.1	-1.1
B - 718		397190.9	875792.6	-1.2
B - 719		397293.2	875791.3	-1.1
B - 720 (DH)		397396.7	875791.1	-0.9
B - 720 G (DH)		397385.2	875794.0	-1.1
B - 721		397338.0	876120.1	-1.5
B - 722		397434.2	875979.6	-1.0
B - 723		397421.2	875675.4	-1.0

Summary of Locations and Elevations of Geotechnical Investigation Sites

surveys made between April 21, 2008 and June 24, 2008

B - 724		397325.5	875663.2	-0.7
B - 725		397099.8	876111.2	-1.0
B - 726		396875.6	876003.9	-1.4
B - 727		397117.7	875666.1	-1.3
B - 728		397070.5	875620.1	-1.4
B - 729		396970.7	875493.4	-1.2
B - 730		396868.0	875621.0	-1.0
B - 731		396645.6	875423.1	-1.5
B - 732		396412.1	875682.4	-1.0
B - 733		396117.5	875897.5	-1.0
B - 734		395833.2	875546.3	-0.6
B - 735		395824.7	875689.4	-0.8
B - 736		395808.5	876107.1	-0.5
B - 737		395803.7	876237.8	-0.6
B - 738		397728.1	875607.3	0.1
B - 739		396962.9	876149.6	-1.6
B - 740 (DHT)	Top of PVC Pipe	397136.7	875842.04	0.5
B - 740 (DHT)	Ground adjacent to PVC Pipe	397137.16	875841.68	-0.8
B - 802		398817.1	876265.7	-1.5
B - 805		396883	877239.5	-1.6
B - 806		395288.3	877237.4	-0.4
B - 807		395277.5	875987.8	-0.7
B - 808		396204.9	875331.8	-1.0
B - 809		397028.0	875151.3	-1.3
B - 810		397806.7	875012.4	-1.2
B - 811		398325.2	874953.8	-1.4
B - 812		398913.2	875043.1	-1.4
B - 813		399047.6	876097.3	-1.3
B - 814		399138.9	877404.8	9.0

Summary of Locations and Elevations of Geotechnical Investigation Sites

surveys made between April 21, 2008 and June 24, 2008

Cone Penetration Test

C - 601		397129.8	876361.3	-0.1
C - 602	<i>abandoned, see B - 640 (DHT)</i>	397115.6	876534.6	-0.5
C - 701		397100.21	875839.25	-1.4
C - 702		397149.4	876042.2	0.3

Observation Wells

OW 606 L	NE Cor Conc Pad	396980.9	876733.7	-1.5
OW 606 L	Top PVC Pipe	396979.9	876732.6	1.3
OW 606 U	NE Cor Conc Pad	396939.1	876736.0	-1.8
OW 606 U	Top PVC Pipe	396938.0	876734.8	1.4
OW 606 D	NE Cor Conc Pad	396961.8	876714.2	-1.6
OW 606 D	Top PVC Pipe	396962.8	876712.9	1.6
OW 621 L	NE Cor Conc Pad	397365.4	876971.4	0.1
OW 621 L	Top PVC Pipe	397364.5	876970.0	3.1
OW 621 U	NE Cor Conc Pad	397376.4	876931.3	0.6
OW 621 U	Top PVC Pipe	397375.8	876930.0	3.9
OW 636 L	NE Cor Conc Pad	395292.1	877258.0	-0.4
OW 636 L	Top PVC Pipe	395290.8	877257.2	3.0
OW 636 U	NE Cor Conc Pad	395286.9	877216.8	-0.6
OW 636 U	Top PVC Pipe	395285.8	877215.7	2.8
OW 706 L	NE Cor Conc Pad	396979.2	875905.6	-1.0
OW 706 L	Top PVC Pipe	396978.2	875904.6	2.2
OW 706 U	NE Cor Conc Pad	396940.8	875897.1	-1.5
OW 706 U	Top PVC Pipe	396940.1	875895.7	1.7
OW 706 D	SE Cor Conc Pad	396961.2	875865.1	-1.1
OW 706 D	Top PVC Pipe	396960.1	875864.4	2.2
OW 721 L	NE Cor Conc Pad	397322.6	876121.2	-1.2
OW 721 L	Top PVC Pipe	397321.5	876120.3	2.0

***Summary of Locations and Elevations of
Geotechnical Investigation Sites***

surveys made between April 21, 2008 and June 24, 2008

OW 721 U	NE Cor Conc Pad	397362.0	876122.8	-1.1
OW 721 U	Top PVC Pipe	397361.2	876121.4	2.0
OW 735 L	NE Cor Conc Pad	395825.2	875670.9	-0.7
OW 735 L	Top PVC Pipe	395824.3	875669.6	2.7
OW 735 U	NE Cor Conc Pad	395824.3	875710.3	-0.5
OW 735 U	Top PVC Pipe	395823.3	875709.2	2.8
OW 802 L (B-802)	NE Cor Conc Pad	398818.3	876266.8	-1.2
OW 802 L (B-802)	Top PVC Pipe	398817.1	876265.7	2.1
OW 802 U	NE Cor Conc Pad	398821.4	876244.8	-1.2
OW 802 U	Top PVC Pipe	398820.2	876243.7	2.2
OW 805 L (B-805 L)	NE Cor Conc Pad	396884.2	877240.4	-1.5
OW 805 L (B-805 L)	Top PVC Pipe	396883.0	877239.5	2.2
OW 805 U (B-805 U)	NE Cor Conc Pad	396841.9	877242.1	-1.6
OW 805 U (B-805 U)	Top PVC Pipe	396842.8	877240.9	1.2
OW 809 L	NE Cor Conc Pad	397009.2	875153.1	-0.9
OW 809 L	Top PVC Pipe	397007.9	875152.3	2.4
OW 809 U	NE Cor Conc Pad	397047.1	875153.1	-0.7
OW 809 U	Top PVC Pipe	397045.8	875152.4	2.5
OW 812 L	NE Cor Conc Pad	398894.2	875046.2	-1.2
OW 812 L	Top PVC Pipe	398892.8	875045.5	2.1
OW 812 U	NE Cor Conc Pad	398935.4	875044.2	-0.8
OW 812 U	Top PVC Pipe	398933.9	875043.5	2.2

***Summary of Locations and Elevations of
Geotechnical Investigation Sites***

surveys made between April 21, 2008 and June 24, 2008

<i>Test Pits</i>

TP 601	397105.6	876035.8	-1.4
TP 701	396988.2	875508.5	-1.4

<i>Stilling Wells</i>

SW - 1	396386.8	874995.1	-2.7
SW - 2	395222.7	877124.0	-2.2

**FINAL DATA REPORT Rev. 2
GEOTECHNICAL EXPLORATION AND TESTING**

**TURKEY POINT COL PROJECT
FLORIDA CITY, FLORIDA**

October 6, 2008

**VOLUME 1
Appendix B – Geotechnical Field Data**

Prepared By:

**MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina**

MACTEC Project No. 6468-07-1950

Prepared For:

**Bechtel Power Corporation
Subcontract No. 25409-102-HC4-CY00-00001**

Contents

**Geotechnical Boring Logs
Back Hoe Test Pit Logs
SPT Report**

Geotechnical Boring Logs

KEY TO SYMBOLS AND DESCRIPTIONS-SOIL/ROCK

TURKEY POINT COL., 5-30-08, 6468-07-1950

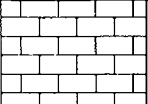


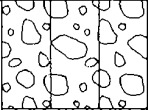
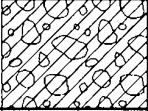

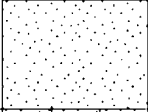
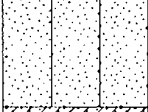
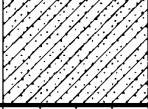
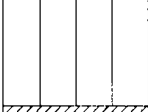



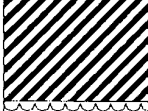
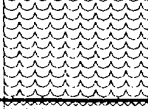
Soils classified under the Unified Soil Classification System (USCS) and in accordance with ASTM D 2488-06

CORRELATION OF SPT RESISTANCE WITH RELATIVE DENSITY-CONSISTENCY				MOISTURE CONTENT	MODIFIERS	
GRANULAR MATERIAL		SILTS AND CLAYS		DRY-Absence of moisture	Approximate %	Modifiers
RELATIVE DENSITY	SPT N Value (blows/ft)	CONSISTENCY	SPT N Value (blows/ft)	MOIST-Damp/no visible H2O	<5%	TRACE
VERY LOOSE	0 - 4	VERY SOFT	0 - 2	WET-Visible free water	5 to 10%	FEW
LOOSE	5 - 10	SOFT	3 - 4		15 to 25%	LITTLE
MEDIUM DENSE	11 - 30	FIRM	5 - 8	HCl Reaction	30 to 45%	SOME
DENSE	31 - 50	STIFF	9 - 15	NONE - No visible reaction	50 to 100%	MOSTLY
VERY DENSE	> 50	VERY STIFF	16 - 30	WEAK - Some reaction/slow	Modifiers provide an estimate of the percentages of gravel, sand, and fines (silt or clay size particles) or other material such as organics, shells, etc.	
		HARD	> 30	STRONG - Violent reaction		
COLOR of Soil/Rock: Based on Munsell Soil Color Charts				SPT Sample Numbering: Boring # - Sample # (602-1, 602-2, 602-3, etc.)		
Particle Size Range for Sand (Fine, Medium, Coarse) and Gravel (Fine or Coarse)				Undisturbed Sample Numbering: Boring # -UD-sample # (602-UD-1)		
GROUND WATER: Ground water level observations were recorded at every boring location at the start and end of each work day, when possible. In general, observed water levels were within +/- 2 feet of the existing ground surface. Due to the use of drilling fluid additives, these values may not represent the ground water conditions at the site. See observation wells for measured ground water levels.				Core Sample Numbering: Boring # -CS-Sample # (602-CS-01)		
				Field Measurements: Horizontal measurements rounded to nearest foot. Vertical measurements, such as SPT sample recovery or penetration, sample depths, core run depth, core run length, core recovery, core RQD, etc. rounded to nearest tenth of a foot (0.1 ft).		
				Datum Reference Information	Horizontal - NAD83, Florida State Plane (Florida East) US ft	
					Elevation - NAVD88, US ft	

ROCK

Classification of Carbonate Rocks (Dunham, 1962) Mud<0.06 mm		MUDSTONE <10% Grains	WACKESTONE >10% Grains, mud supported	PACKSTONE >5% Mud, grain supported	GRAINSTONE <5% Mud	BOUNDSTONE Original components bound together
ROCK HARDNESS DESCRIPTIONS ⁽¹⁾			INDURATION			
VERY SOFT	Core Samples: Rock core crumbles when handled. SPT Samples: N<20		For sedimentary rocks, induration is the hardening of the material by cementing, heat, pressure, etc.			
SOFT	Core Samples: Can break core easily with hands. SPT Samples: N=21-30		FRIABLE	Rubbing with finger frees numerous grains; gentle blow by hammer disintegrates sample.		
MEDIUM HARD	Core Samples:Can break core with hands. SPT Samples: N=31-45		MODERATELY INDURATED	Grains can be separated from sample with steel probe/knife; breaks easily when hit with hammer.		
MODERATELY HARD	Core Samples: Thin edges of rock can be broken with fingers. SPT Samples: N=46-60		INDURATED	Grains are difficult to separate with steel probe/knife; difficult to break with hammer.		
HARD	Core Samples: Thin edges of rock cannot be broken with fingers. SPT Samples: N=61-100		EXTREMELY INDURATED	Sharp hammer blows required to break sample; sample breaks across grains.		
VERY HARD	Core Samples: Rock core rings when struck with a hammer (cherts). SPT Samples: N>50/0.1'		(1) Core sample hardness description based on manual methods in general accordance with Engineering Geology Field Manual (US Bureau of Reclamation, 2001), Army TM 5-818-1 (1983) and Characteristics of Geologic Materials and Formations (Hunt, 2006). SPT sample hardness description based on N-values after McMahan, Jr., "Drilled Shaft Design and Construction in Florida", University of Florida, 1988.			
Core Terms-Abbreviations		EXPLANATION				
DRILL RATE		Time in minutes it takes to core one foot, for each foot or partial foot of a core run. (1:32; 0:54/0.7 ft)				
CORE RUN; RUN LENGTH		Cored Interval; Total distance of core run measured to nearest 0.1 ft. Core runs are not to exceed 5 feet.				
CORE RECOVERY (REC.)		Total length of recovered core, measured to nearest 0.1 ft, divided by the core run length, and expressed as a percentage.				
CORE RQD (RQD)		Rock Quality Designation. Sum of intact core pieces greater than 4 inches in length, measured to the nearest 0.1 ft, divided by the core run length, and expressed as a percentage.				

SOIL AND ROCK SYMBOLS AND DESCRIPTIONS

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
ROCK				LS	CARBONATE ROCKS-LIMESTONE, DOLOSTONE
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		CLEAN SANDS (LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	MUCK, PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS



GEOTECHNICAL BORING LOG

Prepared By OPF Date 8-14-08Checked By SSC Date 8-17-08

SHEET 1 OF 6

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: S. Lehman					
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-75 (CLT)					DRILLER: T.Warren/J.Warren/Guy/Harvey					GROUND WATER (ft)			
BORING NO.: B-601(DH)					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA			
GROUND ELEV.: -1.4 ft (NAVD88)					NORTHING: 396,968 US ft (NAD83/90)					EASTING: 876,643 US ft (NAD83/90)					24 HR. NA			
TOTAL DEPTH: 419.2 ft			BORING DIAMETER: 6" to 25.5', 4" to 419.2'					CASING DEPTH: 6" to 25.5', 4" to 153.3'					HAMMER (ID): 140 lb. Auto (MEC-09)					
DATE STARTED: 2/24/08			COMPLETED: 3/25/08			CORE SIZE: PQ3			BITS USED: 3 7/8" & 6" Roller Cone									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION				
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100								
-1.4					Ground Surface												-1.4	0.0
-1.4	0.0	WOR	WOR	WOR	0													
-3.7	2.3	1	1	10	11													
-6.7	5.3	7	7	6	13													
-9.0	7.6	3	6	10	16													
-11.1	9.7	4	7	8	15													
-13.9	12.5	25	20	31	51													
-16.2	14.8	50/0.2			50/0.2													
-22.8	21.4	5	7	10	17													
-27.8	26.4	50/0.4			50/0.4													
-28.2	26.8																	
-32.9	31.5																	
-37.8	36.4																	
-42.8	41.4																	
-47.8	46.4																	
-52.8	51.4																	
-57.8	56.4																	
-62.8	61.4																	
-67.8	66.4																	
-72.8	71.4																	

TURKEY POINT COL BORE TURKEY POINT COL GDI 8/14/08



SHEET 2 OF 6

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: S. Lehman				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-75 (CLT)					DRILLER: T.Warren/J.Warren/Guy/Harvey				GROUND WATER (ft)			
BORING NO.: B-601(DH)					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core				0 HR.		NA	
GROUND ELEV.: -1.4 ft (NAVD88)					NORTHING: 396,968 US ft (NAD83/90)					EASTING: 876,643 US ft (NAD83/90)				24 HR.		NA	
TOTAL DEPTH: 419.2 ft			BORING DIAMETER: 6" to 25.5', 4" to 419.2'					CASING DEPTH: 6" to 25.5', 4" to 153.3'				HAMMER (ID):140 lb. Auto (MEC-09)					
DATE STARTED: 2/24/08			COMPLETED: 3/25/08			CORE SIZE: PQ3			BITS USED: 3 7/8" & 6" Roller Cone								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100							
-76.2					Continued from previous page												
-77.6	76.2													LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, few vugs, few gastropod shell molds and casts (Lower Fort Thompson Formation) (continued)			
-82.6	81.2																
-87.6	86.2													81.2ft: very soft to hard, friable to indurated, trace shell molds and casts			
-92.6	91.2																
-97.6	96.2																
-102.6	101.2													97.5ft: 0.7'-thick friable zone, little shell molds and casts, trace sand			
-107.6	106.2																
-112.6	111.2																
-117.6	116.2																
-122.6	121.2	9	7	11										111.2ft: soft to moderately hard, fnable to moderately indurated, sandy, few shell fragments			
-129.7	128.3	WOR	3	5										116.4			
-139.7	138.3	9	10	16										122.0			
-149.8	148.4	WOR	WOR	WOR										123.4			

TURKEY POINT COL BORE TURKEY POINT GP TURKEY POINT COL GDT 8/14/08



SHEET 3 OF 6

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: S. Lehman					
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-75 (CLT)				DRILLER: T.Warren/J.Warren/Guy/Harvey				GROUND WATER (ft)			
BORING NO.: B-601(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA			
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 396,968 US ft (NAD83/90)				EASTING: 876,643 US ft (NAD83/90)				24 HR. NA			
TOTAL DEPTH: 419.2 ft		BORING DIAMETER: 6" to 25.5', 4" to 419.2'				CASING DEPTH: 6" to 25.5', 4" to 153.3'				HAMMER (ID):140 lb. Auto (MEC-09)					
DATE STARTED: 2/24/08		COMPLETED: 3/25/08				CORE SIZE: PQ3				BITS USED: 3 7/8" & 6" Roller Cone					
ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI	G			
-151.0					Continued from previous page										
-159.8	158.4	3	8	10							601(DH)-14		-159.8	158.4	148.4ft. greenish gray (10Y5/1), very loose Silty SAND (SM), gray (5Y5/1), to light gray (5Y7/2), medium dense, wet, strong to weak HCl reaction, fine to coarse grained sand, fine gravel, little fines (continued)
-169.8	168.4	5	7	12							601(DH)-15		-159.8	158.4	Sandy SILT (ML), greenish gray (10Y5/1), very stiff, wet, medium dense, fine grained sand, strong HCl reaction
-179.8	178.4	3	8	17							601(DH)-16				178.4ft. fine to medium grained sand, weak HCl reaction
-189.8	188.4	WOR	7	11							601(DH)-17				194.0ft. stiff, fine grained sand
-199.8	198.4	2	5	10							601(DH)-18				
-209.8	208.4	2	4	6							601(DH)-19		-209.8	208.4	SILT with sand (ML), dark greenish gray (10Y4/1), stiff, moist, fine grained sand, weak HCl reaction
-219.8	218.4	4	11	23							601(DH)-20		-216.4	215.0	Silty SAND (SM), olive gray (5Y5/2), dense, moist, fine grained sand, strong HCl reaction (Hawthorn Group)

TURKEY POINT COL BORE - TURKEY POINT COL GDI 8-14-08



SHEET 4 OF 6

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: S. Lehman							
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-75 (CLT)		DRILLER: T.Warren/J.Warren/Guy/Harvey		GROUND WATER (ft)							
BORING NO.: B-601(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA							
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,968 US ft (NAD83/90)		EASTING: 876,643 US ft (NAD83/90)		24 HR. NA							
TOTAL DEPTH: 419.2 ft		BORING DIAMETER: 6" to 25.5", 4" to 419.2'		CASING DEPTH: 6" to 25.5", 4" to 153.3'		HAMMER (ID): 140 lb. Auto (MEC-09)							
DATE STARTED: 2/24/08		COMPLETED: 3/25/08		CORE SIZE: PQ3		BITS USED: 3 7/8" & 6" Roller Cone							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-225.8		Continued from previous page											
-229.8	228.4	9	39	50/0.5						89	1.0	601(DH)-21	Silty SAND (SM), olive gray (5Y5/2), dense, moist, fine grained sand, strong HCl reaction (Hawthorn Group) (continued) 228.4ft: dark greenish gray (10Y4/1), very dense, moist, friable cemented sand fragments
-239.8	238.4	4	8	11						19		601(DH)-22	238.4ft: medium dense, wet
-249.8	248.4	2	11	18						29		601(DH)-23	248.4ft: greenish gray (10Y5/1), no HCl reaction, fine grained sand, friable cemented sand fragments
-259.8	258.4	3	8	13						21		601(DH)-24	258.4ft: dark greenish gray (10Y4/1), wet
-269.8	268.4	4	12	20						32		601(DH)-25	268.4ft: dense
-279.8	278.4	WOR	7	16						23		601(DH)-26	278.4ft: medium dense
-289.8	288.4	4	13	23						36		601(DH)-27	288.4ft: dense
-299.8	298.4											601(DH)-28	-295.4 294.0 POORLY GRADED SAND with silt (SP-SM), olive gray (5Y4/2), dense, wet, fine to medium grained sand, no HCl reaction

TURKEY POINT COL BORE TURKEY POINT COL GDT 8-14 US



SHEET 5 OF 6

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: S. Lehman						
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-75 (CLT)		DRILLER: T.Warren/J.Warren/Guy/Harvey		GROUND WATER (ft)						
BORING NO.: B-601(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA						
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,968 US ft (NAD83/90)		EASTING: 876,643 US ft (NAD83/90)		24 HR. NA						
TOTAL DEPTH: 419.2 ft		BORING DIAMETER: 6" to 25.5", 4" to 419.2'		CASING DEPTH: 6" to 25.5', 4" to 153.3'		HAMMER (ID): 140 lb. Auto (MEC-09)						
DATE STARTED: 2/24/08		COMPLETED: 3/25/08		CORE SIZE: PQ3		BITS USED: 3 7/8" & 6" Roller Cone						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100		
-300.6					Continued from previous page							
		5	20	30								POORLY GRADED SAND with silt (SP-SM), olive gray (5Y4/2), dense, wet, fine to medium grained sand, no HCl reaction (continued)
-309.8	308.4	6	21	30								-306.4 Silty SAND (SM), greenish gray (10Y5/1), very dense, wet, fine to medium grained sand, no HCl reaction 305.0
-319.8	318.4	20	50/0.4									-317.4 POORLY GRADED SAND (SP-SM), greenish gray (10Y5/1), very dense, wet, fine to medium grained sand, weak HCl reaction 316.0
-329.8	328.4	50/0.3										
-339.8	338.4	43	50/0.3									338.4ft: no HCl reaction, organic odor
-349.8	348.4	50/0.4										348.4ft: fine grained sand
-359.8	358.4	50/0.5										
-369.8	368.4	50/0.4										

TURKEY POINT COL BORE TURKEY POINT COL GDT 8 14 08

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade				GEOLOGIST: S. Lehman			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-75 (CLT)				DRILLER: T.Warren/J.Warren/Guy/Harvey				GROUND WATER (ft)			
BORING NO.: B-601(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA			
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 396,968 US ft (NAD83/90)				EASTING: 876,643 US ft (NAD83/90)				24 HR. NA			
TOTAL DEPTH: 419.2 ft				BORING DIAMETER: 6" to 25.5', 4" to 419.2'				CASING DEPTH: 6" to 25.5', 4" to 153.3'				HAMMER (ID): 140 lb. Auto (MEC-09)			
DATE STARTED: 2/24/08				COMPLETED: 3/25/08				CORE SIZE: PQ3				BITS USED: 3 7/8" & 6" Roller Cone			
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-375.4					Continued from previous page										
-379.8	378.4	48	50/0.2								98/0.7	601(DH)-35		-376.4 375.0 Silty SAND (SM), greenish gray (10Y5/1), very dense, wet, no HCl reaction, and interlaminated clayey SAND (SC), very dark greenish gray (10Y3/1), wet, weak HCl reaction, fine to medium grained sand	
-389.8	388.4	37	50/0.5								87/1.0	601(DH)-37			
-399.8	398.4	48	50/0.3								98/0.8	601(DH)-38		398.4ft: fine grained sand	
-419.8	418.4	28	50/0.3								78/0.8	601(DH)-39		-406.4 405.0 POORLY GRADED SAND with silt (SP-SM), greenish gray (10Y5/1), very dense, wet, fine grained sand, weak HCl reaction	
														-420.6 419.2 Boring Terminated at Elevation -420.6 ft	

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 8:14:08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Lehman
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-75 (CLT)	DRILLER: T.Warren/J.Warren/Guy/Harvey	GROUND WATER (ft)
BORING NO.: B-601(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 396,968 US ft (NAD83/90)	EASTING: 876,643 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 419.2 ft	CASING DEPTH: 6" to 25.5', 4" to 153.3'	HAMMER (ID): 140 lb. Auto (MEC-09)	
DATE STARTED: 2/24/08	COMPLETED: 3/25/08	CORE SIZE: PQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Begin Coring @ 26.8 ft
-28.2	26.8	4.7	1:01/0.7 1:43 2:40 3:11 3:44	(4.2) 89%	(3.2) 68%	RUN-1	(20.1) 98%	(18.0) 87%		LIMESTONE, boundstone, white (2.5Y8/1), medium hard to moderately hard, moderately indurated, fossiliferous, recrystallized calcite, coralline (Upper Fort Thompson Formation) (continued)
-32.9	31.5	4.9	2:12 2:42 1:23 1:17 1:24/0.9	(4.9) 100%	(4.0) 82%	RUN-2				31.5ft: hard, indurated, few vugs and shell molds 33.0ft: loss of circulation
-37.8	36.4	5.0	1:34 1:36 1:27 2:02 3:01	(5.0) 100%	(4.8) 96%	RUN-3				
-42.8	41.4	5.0	4:18 2:46 2:09 2:13 2:14	(5.0) 100%	(5.0) 100%	601(DH)-CS-01 RUN-4 601(DH)-CS-02				41.4ft: white (2.5Y8/1) to light gray (2.5Y7/1) at 46.1 ft
-47.8	46.4	5.0	2:08 2:28 1:49 1:51 1:28	(4.9) 98%	(4.9) 98%	RUN-5	(59.0) 87%	(47.8) 71%	-48.8	46.4ft: light gray (2.5Y7/1) to 47.4 ft LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, few vugs, few gastropod shell molds and casts (Lower Fort Thompson Formation)
-52.8	51.4	5.0	1:55 0:31 0:29 0:32 0:35	(5.0) 100%	(5.0) 100%	601(DH)-CS-03 RUN-6 601(DH)-CS-04				51.4ft: moderately hard, moderately indurated
-57.8	56.4	5.0	0:20 0:13 0:22 0:59 0:52	(4.0) 80%	(4.0) 80%	RUN-7				56.4ft: white (2.5Y8/1) and light gray (2.5Y7/1), hard, indurated
-62.8	61.4	5.0	1:01 0:45 0:41 0:35 0:34	(4.2) 84%	(3.2) 64%	RUN-8				61.4ft: white (2.5Y8/1), moderately hard to hard, moderately indurated to indurated
-67.8	66.4	5.0	1:32 0:28 0:27 0:30 0:53	(3.7) 74%	(2.9) 58%	RUN-9 601(DH)-CS-05				
-72.8	71.4	4.8	0:49 0:30 1:26 0:23 1:23/0.8	(2.4) 50%	(0.9) 19%	RUN-10				71.4ft: sandy, trace to few shell fragments
-77.6	76.2	5.0	1:47 1:24 1:03 1:06 0:52	(4.6) 92%	(2.7) 54%	RUN-11				
-82.6	81.2	5.0	0:34 1:22 0:11 0:09 0:33	(3.6) 72%	(2.0) 40%	RUN-12				81.2ft: very soft to hard, friable to indurated, trace shell molds and casts
-87.6	86.2	5.0	1:23 1:11 1:09 1:36 2:01	(5.0) 100%	(4.5) 90%	RUN-13				
-92.6	91.2	5.0	1:17 1:10 0:38 0:41 0:51	(4.9) 98%	(4.9) 98%	601(DH)-CS-06 601(DH)-CS-07 RUN-14				
-97.6	96.2	5.0	0:34 0:18 0:26 1:03 0:58	(4.9) 98%	(4.4) 88%	601(DH)-CS-08 RUN-15				97.5ft: 0.7'-thick friable zone, little shell molds and casts, trace sand
-102.6	101.2									

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL.GDT 8-14-08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Lehman
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-75 (CLT)	DRILLER: T.Warren/J.Warren/Guy/Harvey	GROUND WATER (ft)
BORING NO.: B-601(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 396,968 US ft (NAD83/90)	EASTING: 876,643 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 419.2 ft	CASING DEPTH: 6" to 25.5', 4" to 153.3'	HAMMER (ID): 140 lb. Auto (MEC-09)	
DATE STARTED: 2/24/08	COMPLETED: 3/25/08	CORE SIZE: PQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-107.6	106.2	5.0	0:59 0:41 0:30 0:31 0:34	(5.0) 100%	(5.0) 100%	RUN-16				LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, few vugs, few gastropod shell molds and casts (Lower Fort Thompson Formation) (continued)
-112.6	111.2	5.0	0:34 0:48 0:40 1:22 1:08	(4.8) 96%	(4.4) 88%	RUN-17				
-117.6	116.2	5.0	0:41 0:10 0:33 0:31 0:18	(3.0) 60%	(0.0) 0%	RUN-18				111.2ft: soft to moderately hard, friable to moderately indurated, sandy, few shell fragments
-122.6	121.2	5.0	0:07 0:21 0:07 0:15 0:10	(0.6) 12%	(0.0) 0%	RUN-19	(0.6) 10%	(NA)		Silty SAND (SM), gray (5Y5/1), to light gray (5Y7/2), medium dense, wet, strong to weak HCl reaction, and lenses of LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, sandy, trace shell fragments (Tamiami Formation)

Coring Terminated at Elevation -122.6

TURKEY POINT COL CORE TURKEY POINT GPI TURKEY POINT COL GDT 8/14/08



B-601 (DH) - Box 1



B-601 (DH) - Box 2

B-601 (DH) - Box 3



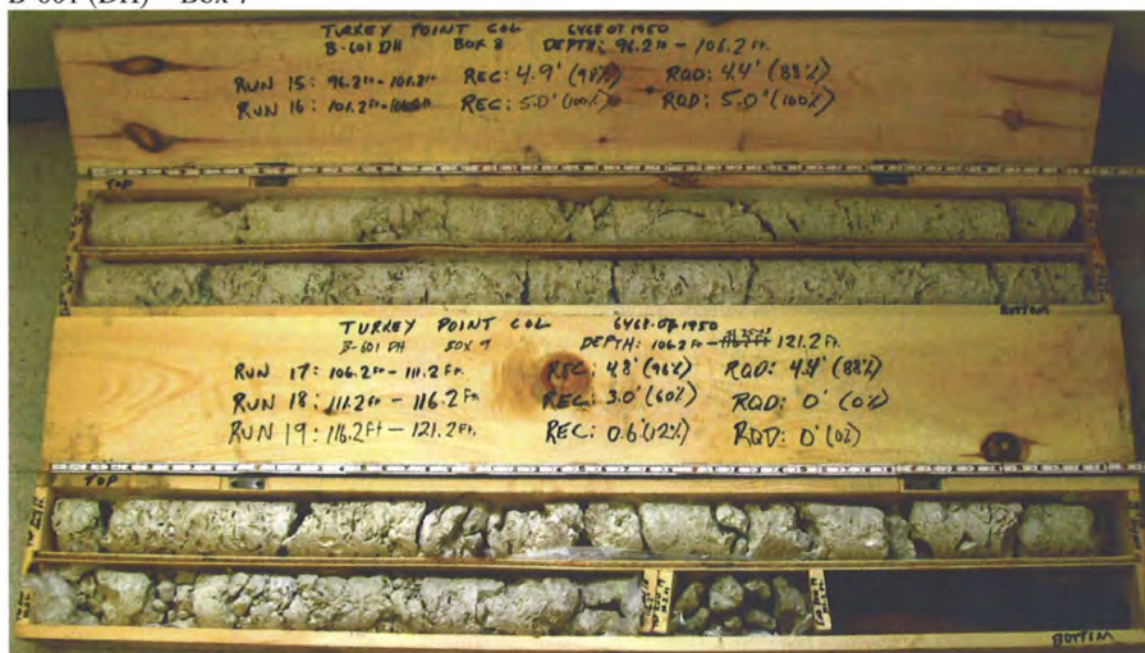
B-601 (DH) - Box 4

B-601 (DH) - Box 5



B-601 (DH) – Box 6

B-601 (DH) – Box 7



B-601 (DH) – Box 8

B-601 (DH) – Box 9



GEOTECHNICAL BORING LOG

Prepared By 7/27/08 Date 7-10-08Checked By [Signature] Date 7-10-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: O. Rodriguez					
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-45C (RAL)					DRILLER: D. Rhodes/ K. Guy					GROUND WATER (ft)			
BORING NO.: B-602					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA			
GROUND ELEV.: -1.4 ft (NAVD88)					NORTHING: 397,020 US ft (NAD83/90)					EASTING: 876,594 US ft (NAD83/90)					24 HR. NA			
TOTAL DEPTH: 204.1 ft			BORING DIAMETER: 4" to 14.0', 3" to 204.1'					CASING DEPTH: 4" to 14.0', 3" to 119.0'					HAMMER (ID): 140 lb. Auto (MEC-12)					
DATE STARTED: 3/10/08			COMPLETED: 3/18/08			CORE SIZE: HQ3			BITS USED: 2 15/16" Roller Cone									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION				
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100								
-1.4					Ground Surface												-1.4	0.0
-1.4	0.0	WOH	WOH	WOH	0							602-1				MUCK, dark gray (5YR4/1), very soft, wet, roots, mostly organic		
-3.9	2.5											602-2A&B				2.5ft: firm		
-6.2	4.8	3	3	11		14						602-3				LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, trace to few fine grained sand, oolitic (Miami Formation)		
-8.7	7.3	7	5	6		11						602-4				7.3ft: no recovery, hard		
		50/0.2								50/0.2								
-11.3	9.9											602-5				9.9ft: white (2.5Y8/1), to light gray (10Y6/1), very soft		
-13.7	12.3	3	4	8		12						602-6				14.8ft: hard		
-16.2	14.8	9	10	13		23						602-7				16.3ft: Switch sampling method to coring		
-17.7	16.3	13	17	50/0.4						67/0.9		RUN-1				16.3ft: medium hard, moderately indurated, fossiliferous, few fine grained sand and clay, oolitic, locally interconnected vugs		
												RUN-2						
-22.5	21.1																	
												RUN-3				LIMESTONE, boundstone, white (2.5Y8/1), medium hard, moderately indurated to indurated, fossiliferous, coralline, few to little vugs (Upper Fort Thompson Formation)		
-27.5	26.1															26.1ft: medium hard to hard, indurated		
												RUN-4				27.0ft: loss of circulation		
-32.5	31.1																	
												RUN-5				36.1ft: indurated to extremely indurated		
-37.5	36.1																	
-39.8	38.4											RUN-6				38.4ft: indurated		
-42.5	41.1											RUN-7						
-47.5	46.1											RUN-8				46.1ft: light greenish gray (10Y7/1) to light gray (7/N)		
-49.5	48.1											RUN-9				LIMESTONE, boundstone, white (2.5Y8/1) hard, indurated, fossiliferous, trace vugs (Lower Fort Thompson Formation)		
												RUN-10						
-52.5	51.1											602-CS-01						
												602-CS-02						
-57.5	56.1											RUN-11						
-62.5	61.1											RUN-12				61.1ft: few vugs		
-67.5	66.1											RUN-13				66.1ft: little vugs		
-72.5	71.1											RUN-14				71.1ft: few vugs		

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 7/10/08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: O. Rodriguez								
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-45C (RAL)		DRILLER: D. Rhodes/ K. Guy		GROUND WATER (ft)								
BORING NO.: B-602		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA								
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 397,020 US ft (NAD83/90)		EASTING: 876,594 US ft (NAD83/90)		24 HR. NA								
TOTAL DEPTH: 204.1 ft		BORING DIAMETER: 4" to 14.0', 3" to 204.1'		CASING DEPTH: 4" to 14.0', 3" to 119.0'		HAMMER (ID): 140 lb. Auto (MEC-12)								
DATE STARTED: 3/10/08		COMPLETED: 3/18/08		CORE SIZE: HQ3		BITS USED: 2 15/16" Roller Cone								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				
-76.2					Continued from previous page									
-77.5	76.1													LIMESTONE, boundstone, white (2.5Y8/1) hard, indurated, fossiliferous, trace vugs (Lower Fort Thompson Formation) (continued)
-80.8	79.4													79.4ft: trace vugs
-82.5	81.1													81.1ft: few vugs
-87.5	86.1													
-92.5	91.1													91.1ft: moderately indurated, little vugs
-97.5	96.1													96.1: few vugs
-102.5	101.1													
-107.5	106.1													
-112.5	111.1													
-117.5	116.1	11	13	25										111.1ft: moderately hard, little vugs, few cemented sand fragments
-124.0	122.6	8	4	2										POORLY GRADED SAND (SP), white (2.5Y8/1), wet, dense, trace coarse grained sand (Tamiami Formation)
-134.0	132.6	6	3	5										116.1ft: Switch sampling method to SPT
-143.9	142.5	6	5	5										Silty SAND (SM), white (5Y8/1), loose, wet, fine to coarse grained sand, fine gravel, strong HCl reaction, trace fine grained friable cemented sand olive gray (5Y5/2), loose

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL.GDT 7/10/08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: O. Rodriguez				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-45C (RAL)			DRILLER: D. Rhodes/ K. Guy			GROUND WATER (ft)				
BORING NO.: B-602			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: -1.4 ft (NAVD88)			NORTHING: 397,020 US ft (NAD83/90)			EASTING: 876,594 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 204.1 ft			BORING DIAMETER: 4" to 14.0', 3" to 204.1'			CASING DEPTH: 4" to 14.0', 3" to 119.0'			HAMMER (ID): 140 lb. Auto (MEC-12)				
DATE STARTED: 3/10/08			COMPLETED: 3/18/08			CORE SIZE: HQ3			BITS USED: 2 15/16" Roller Cone				
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-151.0					Continued from previous page								
-154.0	152.6	11	11	19	30					602-12			Silty SAND (SM), white (5Y8/1), loose, wet, fine to coarse grained sand, fine gravel, strong HCl reaction, trace fine grained friable cemented sand (continued) 152.6ft: medium dense, trace limestone fragments
-164.0	162.6	3	4	11	15					602-13			Sandy SILT (ML), olive gray (5Y5/2), stiff, moist, trace shell fragments, fine to medium grained sand, strong HCl reaction
-174.0	172.6	2	3	10	13					602-14			
-184.0	182.6	2	3	6	9					602-15			182.6ft: firm
-194.0	192.6	2	2	17	19					602-16			very stiff, wet, fine grained sand
-204.0	202.6	2	4	10	14					602-17			
													Boring Terminated at Elevation -205.5 ft

TURKEY POINT COL BORE TURKEY POINT COL.GDT 7/10/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: O. Rodriguez			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-45C (RAL)				DRILLER: D. Rhodes/ K. Guy			GROUND WATER (ft)		
BORING NO.: B-602				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core			0 HR. NA		
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 397,020 US ft (NAD83/90)				EASTING: 876,594 US ft (NAD83/90)			24 HR. NA		
TOTAL DEPTH: 204.1 ft				CASING DEPTH: 4" to 14.0', 3" to 119.0'						HAMMER (ID): 140 lb. Auto (MEC-12)			
DATE STARTED: 3/10/08		COMPLETED: 3/18/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %RQD (ft) %		SAMP. NO.	STRATA REC (ft) %RQD (ft) %		L O G	DESCRIPTION AND REMARKS			
										Begin Coring @ 16.3 ft			
-17.7	16.3	4.8	5:35 1:23 0:43 0:23 0:15/0.8	(1.6) 33%	(0.5) 10%	RUN-1	(1.6) 21%	(0.5) 6%		LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, trace to few fine grained sand, oolitic (Miami Formation) (continued) 16.3ft: medium hard, moderately indurated, fossiliferous, few fine grained sand and clay, oolitic, locally interconnected vugs			
-22.5	21.1	5.0	1:06 0:35 0:45 1:22 2:34	(1.2) 24%	(0.6) 12%	RUN-2				24.0			
-27.5	26.1	5.0	2:20 1:32 1:12 0:57 0:57	(3.1) 62%	(1.3) 26%	RUN-3	(17.4) 75%	(10.0) 43%		LIMESTONE, boundstone, white (2.5Y8/1), medium hard, moderately indurated to indurated, fossiliferous, coralline, few to little vugs (Upper Fort Thompson Formation) 26.1ft: medium hard to hard, indurated 27.0ft: loss of circulation			
-32.5	31.1	5.0	1:21 1:14 0:55 1:22 1:27	(3.3) 66%	(2.0) 40%	RUN-4							
-37.5	36.1	2.3	1:16 6:04	(1.4) 61%	(0.0) 0%	RUN-5				36.1ft: indurated to extremely indurated			
-39.8	38.4	2.7	6:43/0.3 0:33/0.7 2:10 2:08	(2.1) 78%	(1.2) 44%	RUN-6				38.4ft: indurated			
-42.5	41.1	5.0	2:04 2:03 0:39 1:44 2:10	(4.2) 84%	(4.0) 80%	RUN-7							
-47.5	46.1	2.0	1:53 5:10	(2.0) 100%	(0.9) 45%	RUN-8				46.1ft: light greenish gray (10Y7/1) to light gray (7/N)			
-49.5	48.1	3.0	1:25 1:36 1:40	(3.0) 100%	(3.0) 100%	RUN-9	(37.0) 57%	(20.9) 32%		48.1			
-52.5	51.1	5.0	4:41 1:42 1:27 0:43 0:37	(4.9) 98%	(3.9) 78%	RUN-10 602-CS-01 602-CS-02							
-57.5	56.1	5.0	2:03 4:08 0:45 0:42 0:53	(3.4) 68%	(1.0) 20%	RUN-11							
-62.5	61.1	5.0	1:10 0:55 0:27 0:33 0:26	(1.3) 26%	(0.0) 0%	RUN-12				61.1ft: few vugs			
-67.5	66.1	5.0	0:40 0:17 0:34 1:08 0:41	(1.0) 20%	(0.0) 0%	RUN-13				66.1ft: little vugs			
-72.5	71.1	5.0	1:24 1:26 0:53 0:45 2:08	(1.5) 30%	(0.8) 16%	RUN-14				71.1ft: few vugs			
-77.5	76.1	3.3	2:03 1:19 1:24	(3.1) 94%	(2.4) 73%	RUN-15							
-80.8	79.4	1.7	3:02/0.3 1:28/0.7 1:29	(1.7) 100%	(1.7) 100%	RUN-16 602-CS-03				79.4ft: trace vugs			
-82.5	81.1	5.0	2:02 0:50 0:20 0:17 0:06	(1.7) 34%	(0.5) 10%	RUN-17				81.1ft: few vugs			
-87.5	86.1	5.0	1:06 1:19 0:42 0:40	(1.6) 32%	(0.4) 8%	RUN-18							
-92.5	91.1												

TURKEY POINT COL CORE TURKEY POINT GP TURKEY POINT COL GDI 7/10/08



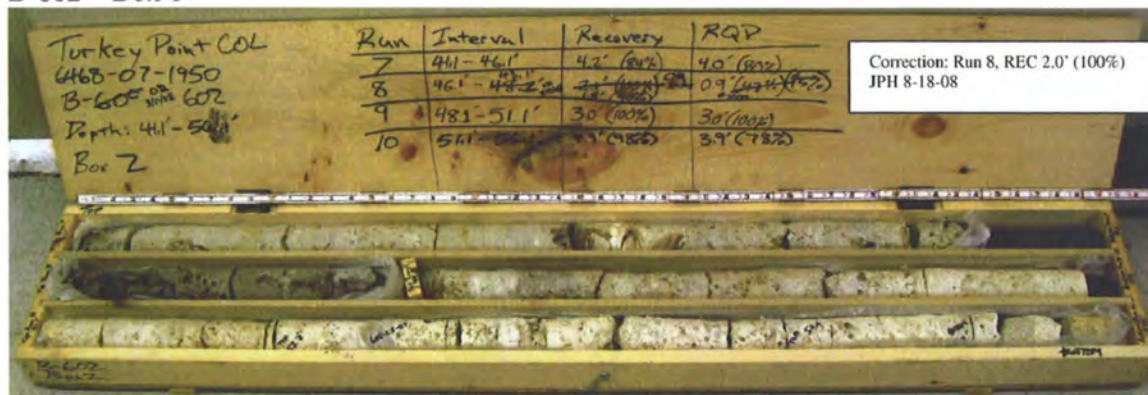
SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: O. Rodriguez			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-45C (RAL)				DRILLER: D. Rhodes/ K. Guy				GROUND WATER (ft)	
BORING NO.: B-602				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 397,020 US ft (NAD83/90)				EASTING: 876,594 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 204.1 ft				CASING DEPTH: 4" to 14.0', 3" to 119.0'						HAMMER (ID): 140 lb. Auto (MEC-12)			
DATE STARTED: 3/10/08		COMPLETED: 3/18/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %RQD (ft) %		SAMP. NO.	STRATA REC (ft) %RQD (ft) %		L O G	DESCRIPTION AND REMARKS			
Continued from previous page													
-97.5	96.1	5.0	0.34 0.59 1:17 1:38 1:42 1.08	(1.2) 24%	(0.0) 0%	RUN-19					91.1ft: moderately indurated, little vugs LIMESTONE, boundstone, white (2.5Y8/1) hard, indurated, fossiliferous, trace vugs (Lower Fort Thompson Formation) (continued)		
-102.5	101.1	5.0	0.32 0.34 0.34 0.54 0.54	(4.2) 84%	(1.7) 34%	RUN-20					96.1: few vugs		
-107.5	106.1	5.0	0.44 0.34 0.41 0.40 0.43	(4.9) 98%	(4.7) 94%	RUN-21							
-112.5	111.1	5.0	0.45 0.35 0.56 0.24 0.46	(2.6) 52%	(0.4) 8%	RUN-22							
-117.5	116.1	5.0	0.21 0.38 1:13 0:50 0:36	(0.9) 18%	(0.4) 8%	RUN-23	(0.0) 0%	(NA)			-114.4	111.1ft: moderately hard, little vugs, few cemented sand fragments	
											-117.5	POORLY GRADED SAND (SP), white (2.5Y8/1), wet, dense, trace coarse grained sand (Tamiami Formation)	
												Coring Terminated at Elevation -117.5	

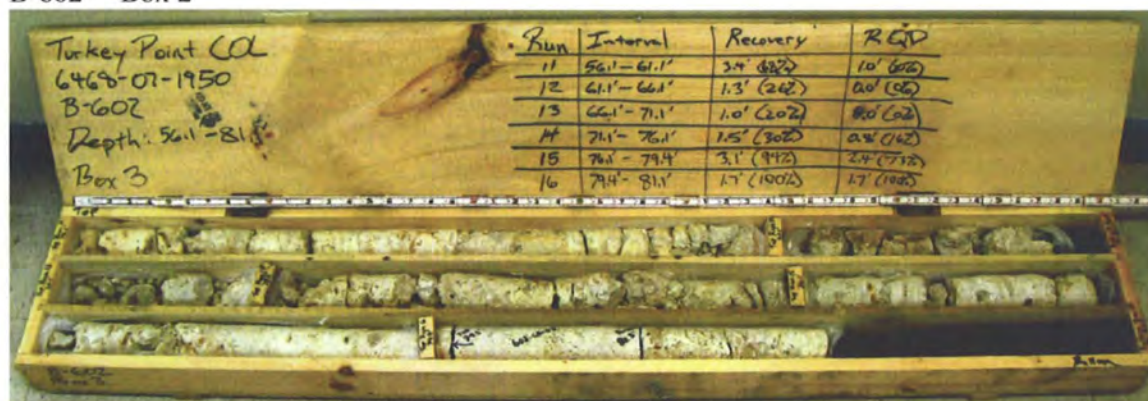
TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 7/10/08



B-602 - Box 1



B-602 - Box 2



B-602 - Box 3



B-602 - Box 4







B-602 - Box 5



GEOTECHNICAL BORING LOG

Prepared By Tom Date 7-10-08Checked By Tom Date 7-10-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade		GEOLOGIST: L. Bisson				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (ATL)			DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft)			
BORING NO.: B-603			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA			
GROUND ELEV.: -1.4 ft (NAVD88)			NORTHING: 397,018 US ft (NAD83/90)			EASTING: 876,697 US ft (NAD83/90)			24 HR. NA			
TOTAL DEPTH: 151.2 ft		BORING DIAMETER: 4" to 15.0', 3" to 151.2'			CASING DEPTH: 4" to 15.0', 3" to 124.0'			HAMMER (ID): 140 lb. Auto (MEC-03)				
DATE STARTED: 2/14/08		COMPLETED: 2/21/08		CORE SIZE: HQ3			BITS USED: 4 1/4" Drag Bit & 2 15/16" Roller Cone					
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	LOG	SOIL AND ROCK DESCRIPTION
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100		
-1.4					Ground Surface							-1.4 0.0
-1.4	0.0	WOH	WOH	WOH							603-1	 MUCK, light gray (2.5Y7/2), to black (2.5Y2.5/1), very soft, wet, mostly organics, trace roots, trace shell fragments
-3.9	2.5										603-2A&B	
-6.4	5.0	WOH	3	10							603-3	 LIMESTONE, boundstone, white (2.5Y8.1), very soft, wet, moderately indurated, trace shell fragments (Miami Formation)
-8.9	7.5										603-4	
-11.4	10.0	10	8	8							603-5	5.0ft: oolitic 7.5ft: mottled very dark gray (2.5Y3/1) 10.0ft: pale yellow (2.5Y8/2), to light brownish gray (2.5Y6/2), mottled light olive brown (2.5Y5/4), trace calcareous concretions
-13.9	12.5	10	7	6							603-6	
-16.4	15.0	5	9	10							603-7	12.5ft: pale yellow (2.5Y8/2), to light gray (2.5Y7/2), soft 15.0ft: white (2.5Y8/1), mottled light gray (2.5Y7/1), hard, indurated
-17.4	16.0	5	11	16							603-7	
-19.8	18.4	7	50/0.5								RUN-1	16.0ft: Switch sampling method to coring 16.0ft: light gray (2.5Y7/2), moderately hard, indurated, trace sand, shells, vugs, fossiliferous, locally interconnected vugs 18.4ft: trace recrystallized calcite
											RUN-2	
-24.8	23.4										RUN-3	 LIMESTONE, boundstone, white (2.5Y8/1), to light brownish gray (2.5Y6/2), moderately hard to hard, indurated, little recrystallized calcite, trace shell fragments, trace to few vugs (Upper Fort Thompson Formation)
-29.8	28.4										RUN-4	
												25.9ft: loss of circulation 28.4ft: coralline
-34.8	33.4										RUN-5	
												33.4ft: white (2.5Y8/1), hard
-39.8	38.4										RUN-6	
												43.4ft: white (2.5Y8/1) to gray (2.5Y5/1), trace coralline
-44.8	43.4										RUN-7	
-49.8	48.4										RUN-8	 LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace shells (Lower Fort Thompson Formation)
-54.8	53.4										RUN-9	
												53.4ft: medium hard, moderately indurated to friable
-59.8	58.4										RUN-10	
												58.4ft: moderately hard, indurated, trace sand
-64.8	63.4										RUN-11	
-69.8	68.4										RUN-12	63.4ft: soft to medium hard, friable to moderately indurated
-74.8	73.4										RUN-13	
												68.4ft: moderately hard, indurated
												73.4ft: soft to medium hard, friable to moderately indurated, trace coralline

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDI 7/10/08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: L. Bisson				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (ATL)			DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft)				
BORING NO.: B-603			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: -1.4 ft (NAVD88)			NORTHING: 397,018 US ft (NAD83/90)			EASTING: 876,697 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 151.2 ft			BORING DIAMETER: 4" to 15.0', 3" to 151.2'			CASING DEPTH: 4" to 15.0', 3" to 124.0'			HAMMER (ID): 140 lb. Auto (MEC-03)				
DATE STARTED: 2/14/08			COMPLETED: 2/21/08			CORE SIZE: HQ3			BITS USED: 4 1/4" Drag Bit & 2 15/16" Roller Cone				
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-76.2					Continued from previous page								
-79.8	78.4										RUN-14		LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace shells (Lower Fort Thompson Formation) (continued)
-84.8	83.4										RUN-15		83.4ft: moderately hard, indurated
-89.8	88.4										RUN-16		88.4ft: medium hard
-94.8	93.4										RUN-17		93.4ft: moderately indurated
-99.8	98.4										RUN-18		98.4ft: moderately hard, indurated, few shells and shell molds
-104.8	103.4										RUN-19		103.4ft: hard, indurated
-109.8	108.4										RUN-20		108.4ft: moderately hard, moderately indurated
-114.8	113.4										RUN-21		
-121.9	120.5	6	12	10							603-8		-116.4 Silty SAND (SM), light gray (5Y7/2), medium dense, moist, fine grained sand, little fines (Tamiami Formation) 115.0
-126.1	124.7	6	12	10							603-9		-121.9 120.5ft: Switch sampling method to SPT Sandy SILT (ML), light gray (5Y7/2), very stiff, moist, fine to coarse sand, fine gravel 120.5
-133.1	131.7	4	5	6							603-10		124.7ft: greenish gray (10Y6/1), trace shells 126.2ft: loss of circulation
-137.8	136.4	5	2	5							603-11		-133.1 Silty SAND (SM), greenish gray (5GY6/1), medium dense, moist, fine to medium grained sand, fine gravel, trace shells 131.7
-140.9	139.5	12	10	8							603-12		136.4ft: loose, fine to coarse sand
-146.1	144.7	7	9	10							603-13		139.5ft: medium dense
-151.1	149.7												

TURKEY POINT COL BORE TURKEY POINT COL GDT 7/10/08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: L. Bisson					
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (ATL)			DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft)					
BORING NO.: B-603			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA					
GROUND ELEV.: -1.4 ft (NAVD88)			NORTHING: 397,018 US ft (NAD83/90)			EASTING: 876,697 US ft (NAD83/90)			24 HR. NA					
TOTAL DEPTH: 151.2 ft			BORING DIAMETER: 4" to 15.0', 3" to 151.2'			CASING DEPTH: 4" to 15.0', 3" to 124.0'			HAMMER (ID): 140 lb. Auto (MEC-03)					
DATE STARTED: 2/14/08			COMPLETED: 2/21/08			CORE SIZE: HQ3			BITS USED: 4 1/4" Drag Bit & 2 15/16" Roller Cone					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100		MOI		
-151.0					Continued from previous page									
		5	7	8	● 15						60-14			-152.6 149.7ft: fine grained sand 151.2
														Boring Terminated at Elevation -152.6 ft

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL.GDT 7/10/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: L. Bisson
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-603	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,018 US ft (NAD83/90)	EASTING: 876,697 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.2 ft	CASING DEPTH: 4" to 15.0', 3" to 124.0'	HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 2/14/08	COMPLETED: 2/21/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	RQD (ft) %	SAMP. NO.	STRATA REC (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS
										Begin Coring @ 16.0 ft
-17.4	16.0	2.4	0.27	(1.6)	(0.5)	RUN-1	(4.4)	(1.9)		LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, moderately indurated, trace shell fragments (Miami Formation) (continued)
-19.8	18.4		0.45	67%	21%		59%	26%		16.0ft: light gray (2.5Y7/2), moderately hard, indurated, trace sand, shells, vugs, fossiliferous, locally interconnected vugs
		5.0	0.17/0.4	(2.8)	(1.4)	RUN-2				18.4ft: trace recrystallized calcite
			0.06	(2.8)	(1.4)					
			0.52	56%	28%					
			0.22							
			0.13							
-24.8	23.4		0.13							-24.8
		5.0	0.11	(4.2)	(1.1)	RUN-3	(21.6)	(14.9)		LIMESTONE, boundstone, white (2.5Y8/1), to light brownish gray (2.5Y6/2), moderately hard to hard, indurated, little recrystallized calcite, trace shell fragments, trace to few vugs (Upper Fort Thompson Formation)
			0.16	84%	22%		86%	60%		
			0.41							
			0.49							
			0.36							
-29.8	28.4		0.11	(3.3)	(0.5)	RUN-4				25.9ft: loss of circulation
		5.0	0.16	66%	10%					28.4ft: coralline
			0.16							
			0.11							
			0.26							
-34.8	33.4		0.36	(5.0)	(4.7)	RUN-5				33.4ft: white (2.5Y8/1), hard
		5.0	0.34	100%	94%					
			0.38							
			0.35							
			0.38							
-39.8	38.4		0.40	(5.0)	(5.0)	RUN-6				
		5.0	0.48	100%	100%					
			0.45							
			0.59							
			1.04							
-44.8	43.4		0.10	(4.1)	(3.6)	RUN-7				43.4ft: white (2.5Y8/1) to gray (2.5Y5/1), trace coralline
		5.0	1.02	82%	72%					
			1.16							
			1.08							
			1.47							
-49.8	48.4		1.37	(5.0)	(4.0)	RUN-8	(55.7)	(34.5)		-49.8
		5.0	1.20	100%	80%		84%	52%		LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace shells (Lower Fort Thompson Formation)
			1.19							
			0.53							
			0.25							
-54.8	53.4		0.29	(3.6)	(1.4)	RUN-9				53.4ft: medium hard, moderately indurated to friable
		5.0	0.26	72%	28%					
			0.39							
			0.06							
			0.10							
-59.8	58.4		0.26	(4.2)	(2.2)	RUN-10				58.4ft: moderately hard, indurated, trace sand
		5.0	0.21	84%	44%					
			0.18							
			0.11							
			3.30							
-64.8	63.4		0.47	(4.3)	(2.2)	RUN-11				63.4ft: soft to medium hard, friable to moderately indurated
		5.0	0.24	86%	44%					
			0.38							
			0.49							
			0.14							
-69.8	68.4		0.16	(3.4)	(1.1)	RUN-12				68.4ft: moderately hard, indurated
		5.0	0.53	68%	22%					
			0.48							
			2.01							
			1.18							
-74.8	73.4		0.26	(3.3)	(1.6)	RUN-13				73.4ft: soft to medium hard, friable to moderately indurated, trace coralline
		5.0	1.04	66%	32%					
			0.38							
			1.18							
			1.34							
-79.8	78.4		1.09	(4.0)	(2.7)	RUN-14				
		5.0	0.58	80%	54%					
			0.28							
			0.44							
			0.38							
-84.8	83.4		0.27	(4.3)	(3.0)	RUN-15				83.4ft: moderately hard, indurated
		5.0	0.12	86%	60%					
			0.20							
			0.41							
			0.58							
-89.8	88.4		1.16	(5.0)	(4.2)	RUN-16				88.4ft: medium hard
		5.0	0.58	100%	84%					

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 7 10/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: L. Bisson
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-603	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,018 US ft (NAD83/90)	EASTING: 876,697 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.2 ft	CASING DEPTH: 4" to 15.0', 3" to 124.0'	HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 2/14/08	COMPLETED: 2/21/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

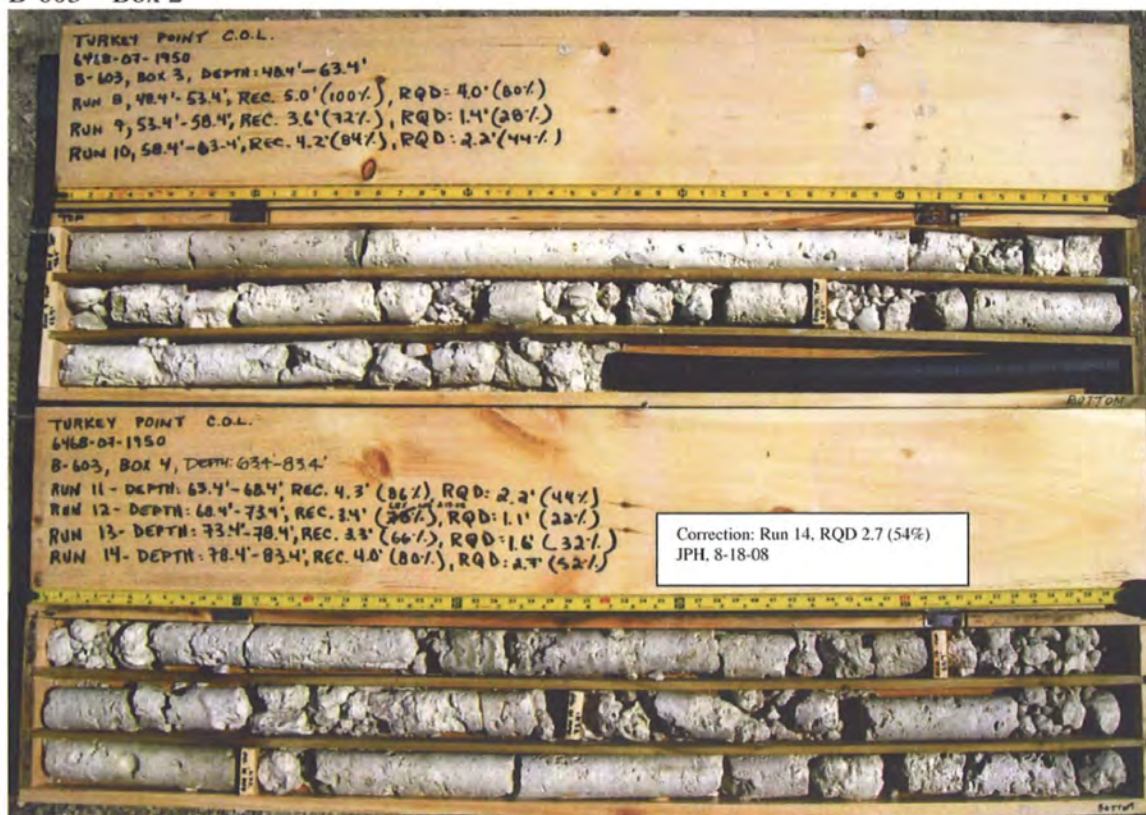
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC. (ft) %	ROD (ft) %		REC. (ft) %	ROD (ft) %		
										Continued from previous page
-94.8	93.4		0:52 0:44 0:22							LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace shells (Lower Fort Thompson Formation) (continued)
		5.0	0:40 0:28 0:22 0:18 0:26	(4.5) 90%	(3.2) 64%	RUN-17				93.4ft: moderately indurated
-99.8	98.4									
		5.0	0:15 0:19 0:29 0:32 0:35	(4.4) 88%	(3.0) 60%	RUN-18				98.4ft: moderately hard, indurated, few shells and shell molds
-104.8	103.4									
		5.0	0:27 0:35 0:30 0:34 0:37	(5.0) 100%	(4.1) 82%	RUN-19				103.4ft: hard, indurated
-109.8	108.4									
		5.0	0:21 0:18 1:11 0:23 0:06	(4.0) 80%	(1.8) 36%	RUN-20				108.4ft: moderately hard, moderately indurated
-114.8	113.4									
		5.0	0:16 0:07 0:36 0:18 0:07	(1.0) 20%	(0.0) 0%	RUN-21	(0.0) 0%	(NA)		-116.4 Silty SAND (SM), light gray (5Y7/2), medium dense, moist, fine grained sand, little fines (Tamiami Formation) -119.8
-119.8	118.4									115.0 118.4
										Coring Terminated at Elevation -152.6

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 7/10/08



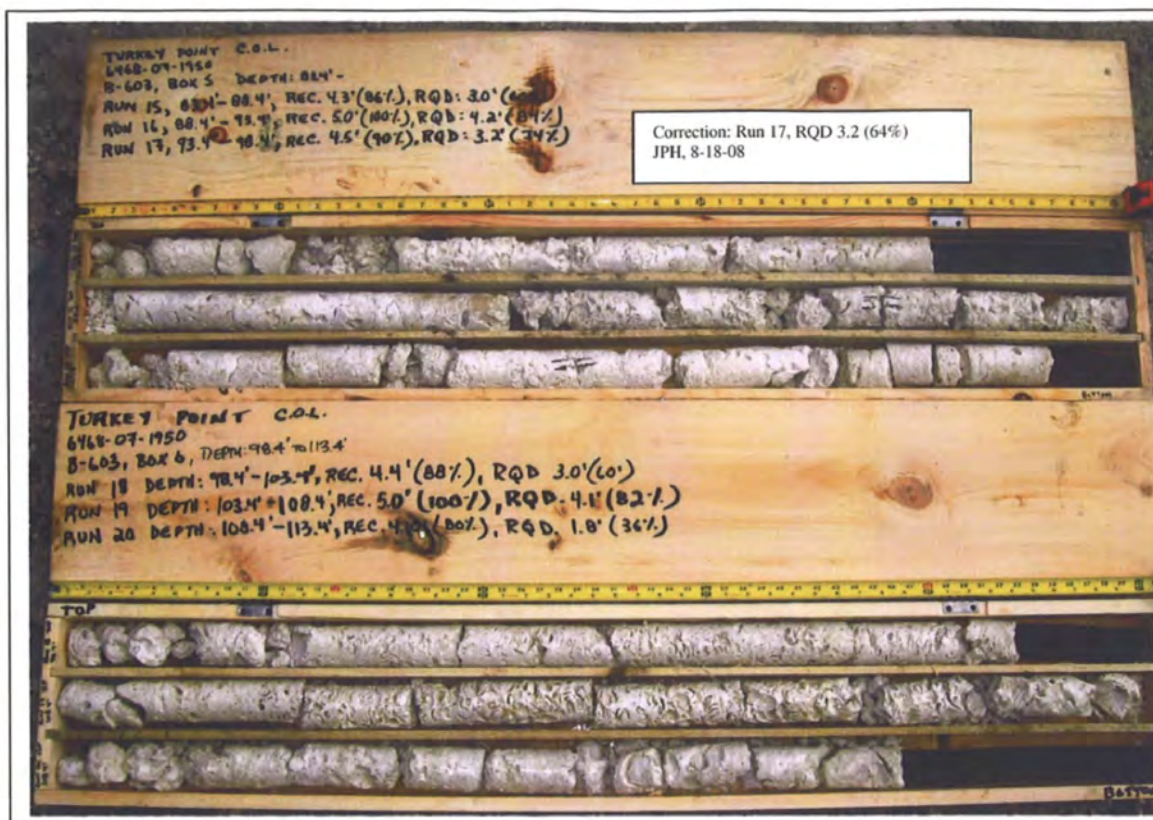
B-603 - Box 1

B-603 - Box 2



B-603 - Box 3

B-603 - Box 4



B-603 – Box 5
B-603 – Box 6



B-603 – Box 7



GEOTECHNICAL BORING LOG

Prepared By 2274 Date 5-30-08Checked By PM Date 5-30-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: S. Woodham				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550X (ATL)					DRILLER: P. Pitts/ R. Landeros					GROUND WATER (ft)		
BORING NO.: B-604(DH)					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA		
GROUND ELEV.: -1.5 ft (NAVD88)					NORTHING: 396,916 US ft (NAD83/90)					EASTING: 876,592 US ft (NAD83/90)					24 HR. NA		
TOTAL DEPTH: 165.0 ft			BORING DIAMETER: 5" to 29.0', 4" to 165.0'					CASING DEPTH: 4" to 29.0'					HAMMER (ID): 140 lb. Auto (MEC-05)				
DATE STARTED: 3/19/08			COMPLETED: 3/23/08			CORE SIZE: HQ3			BITS USED: 4 7/8" & 3 7/8" Roller Cones								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION				
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100							
-1.5					Ground Surface												
-1.5	0.0	WOH	WOH	WOH	0						604(DH)-1		-1.5		0.0		
-5.0	3.5	5	11	13							604(DH)-2		-4.5		3.0		
-7.5	6.0	12	10	8							604(DH)-3						
-10.0	8.5	8	14	19							604(DH)-4						
-12.0	10.5	8	19	50/0.2							604(DH)-5						
-15.0	13.5	11	28	25							604(DH)-6						
-20.0	18.5	5	5	6							604(DH)-7						
-25.0	23.5	7	9	12							604(DH)-8						
-30.0	28.5	5	1	2							604(DH)-9						
-35.0	33.5																
-35.4	33.9	50/0.4									604(DH)-10						
											RUN-1						
-40.3	38.8										RUN-2						
-45.3	43.8										RUN-3						
-50.3	48.8										RUN-4						
-55.3	53.8										604(DH)-CS-01						
											604(DH)-CS-02						
-60.3	58.8										RUN-5						
-65.3	63.8										RUN-6						
-70.3	68.8										RUN-7						
-75.3	73.8										RUN-8						
											RUN-9						

TURKEY POINT COL BORE, TURKEY POINT COL GDT 5/30/08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: S. Woodham				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550X (ATL)			DRILLER: P. Pitts/ R. Landeros			GROUND WATER (ft)				
BORING NO.: B-604(DH)			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: -1.5 ft (NAVD88)			NORTHING: 396,916 US ft (NAD83/90)			EASTING: 876,592 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 165.0 ft			BORING DIAMETER: 5" to 29.0', 4" to 165.0'			CASING DEPTH: 4" to 29.0'			HAMMER (ID): 140 lb. Auto (MEC-05)				
DATE STARTED: 3/19/08			COMPLETED: 3/23/08			CORE SIZE: HQ3			BITS USED: 4 7/8" & 3 7/8" Roller Cones				
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-76.3		Continued from previous page											
-80.3	78.8												LIMESTONE, boundstone, white (10YR8/1), hard, moderately indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued) 78.8 to 79.6ft: sand zone 83.8 to 86.0ft: sand zone 88.8ft: trace to few vugs 98.8ft: shell molds and casts 118.8ft: Switch sampling method to SPT; no recovery 128.9ft: no recovery 138.5ft: fine to medium grained sand, fine gravel
-85.3	83.8												
-90.3	88.8												
-95.3	93.8												
-100.3	98.8												
-105.3	103.8												
-110.3	108.8												
-115.3	113.8												
-120.3	118.8	4	6	9									
-130.4	128.9	3	6	7									
-140.0	138.5	7	7	8									
-150.0	148.5	5	7	9									

TURKEY POINT COL BORE TURKEY POINT COL GDT 5.30.08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: S. Woodham			
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550X (ATL)			DRILLER: P. Pitts/ R. Landeros			GROUND WATER (ft)			
BORING NO.: B-604(DH)			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA			
GROUND ELEV.: -1.5 ft (NAVD88)			NORTHING: 396,916 US ft (NAD83/90)			EASTING: 876,592 US ft (NAD83/90)			24 HR. NA			
TOTAL DEPTH: 165.0 ft			BORING DIAMETER: 5" to 29.0', 4" to 165.0'			CASING DEPTH: 4" to 29.0'			HAMMER (ID): 140 lb. Auto (MEC-05)			
DATE STARTED: 3/19/08			COMPLETED: 3/23/08			CORE SIZE: HQ3			BITS USED: 4 7/8" & 3 7/8" Roller Cones			
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI	
-151.1					Continued from previous page							
-165.0	163.5	4	6	10	● 16					B-04(DH)-15		Silty SAND (SM), greenish gray (10Y6/1), medium dense, moist, some fines, fine grained sand, strong HCl reaction (Tamiami Formation) (continued)
												Sandy SILT (ML), greenish gray (10Y6/1), very stiff, moist, fine grained sand, strong HCl reaction Boring Terminated at Elevation -166.5 ft

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: P. Pitts/ R. Landeros	GROUND WATER (ft)
BORING NO.: B-604(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 396,916 US ft (NAD83/90)	EASTING: 876,592 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 165.0 ft	CASING DEPTH: 4" to 29.0'	HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 3/19/08	COMPLETED: 3/23/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP NO.	STRATA		L O G	DESCRIPTION AND REMARKS
REC (ft) %	RQD (ft) %	REC (ft) %	RQD (ft) %							
										Begin Coring @ 33.9 ft
-35.4	33.9	4.9	0.55 1.02 1.05 1.16 1.00/0.9	(1.5) 31%	(1.3) 27%	RUN-1	(3.6) 24%	(1.8) 12%		LIMESTONE, boundstone, pale yellow (2.5Y8/2), very soft, wet, coarse grained sand, strong HCl reaction (Upper Fort Thompson Formation)
-40.3	38.8	5.0	1.02 2.05 1.55 2.12 0.50	(0.4) 8%	(0.0) 0%	RUN-2				25.0ft: loss of circulation (<i>continued</i>) 33.9ft: hard, indurated, strong HCl reaction, fossiliferous, little vugs 38.8ft: moderately indurated
-45.3	43.8	5.0	ND 2.03 2.53 3.39 2.30	(1.7) 34%	(0.5) 10%	RUN-3				
-50.3	48.8	5.0	0.59 1.29 1.08 0.45 0.30	(4.8) 96%	(4.8) 96%	RUN-4 604(DH)- CS-01 604(DH)- CS-02	(44.9) 68%	(27.2) 41%		LIMESTONE, boundstone, white (10YR8/1), hard, moderately indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)
-55.3	53.8	5.0	0.28 0.29 0.36 0.29 0.28	(4.3) 86%	(2.7) 54%	RUN-5				53.8ft: moderately hard to hard
-60.3	58.8	5.0	0.31 0.35 0.52 0.37 0.25	(2.3) 46%	(0.3) 6%	RUN-6				58.8ft: moderately hard, indurated
-65.3	63.8	5.0	0.16 1.00 0.30 0.40 0.45	(3.5) 70%	(1.8) 36%	RUN-7				63.8ft: hard, trace coarse grained sand
-70.3	68.8	5.0	0.04 0.35 0.45 0.05 0.51	(1.9) 38%	(0.4) 8%	RUN-8				
-75.3	73.8	5.0	0.15 0.07 0.11 0.36 1.35	(1.8) 36%	(0.8) 16%	RUN-9				
-80.3	78.8	5.0	2.14 1.33 0.47 0.45 1.04	(3.6) 72%	(2.0) 40%	RUN-10 604(DH)- CS-03				78.8 to 79.6ft: sand zone
-85.3	83.8	5.0	0.59 0.37 1.42 1.20 2.30	(2.7) 54%	(0.0) 0%	RUN-11				83.8 to 86.0ft: sand zone
-90.3	88.8	5.0	0.04 0.21 0.43 0.59 0.22	(1.7) 34%	(0.6) 12%	RUN-12				88.8ft: trace to few vugs
-95.3	93.8	5.0	0.27 0.40 0.50 0.49 0.56	(4.7) 94%	(3.4) 68%	RUN-13				
-100.3	98.8	5.0	0.52 0.53 0.44 0.58 0.50	(5.0) 100%	(4.0) 80%	RUN-14				98.8ft: shell molds and casts
-105.3	103.8	5.0	0.52 1.05 0.55 1.03 0.55	(5.0) 100%	(4.4) 88%	RUN-15				
-110.3	108.8									

TURKEY POINT COL CORE TURKEY POINT GFI TURKEY POINT COL GDT 5 30.08

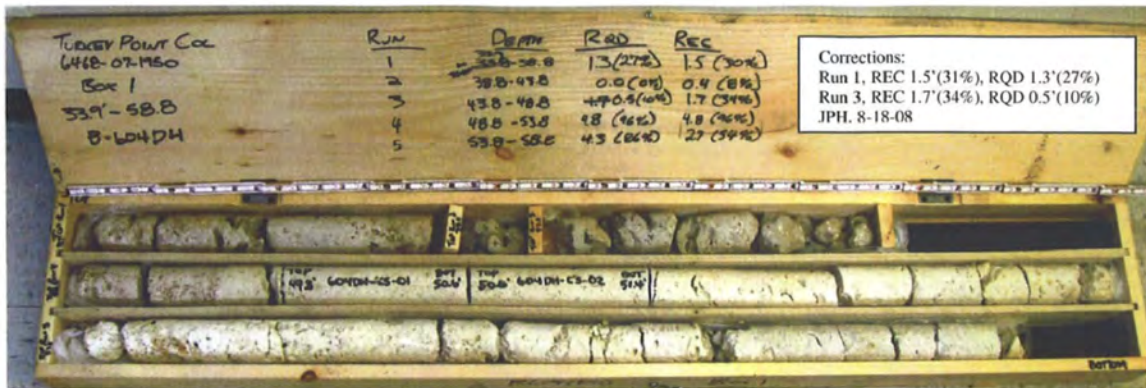


SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: S. Woodham	
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550X (ATL)				DRILLER: P. Pitts/ R. Landeros		GROUND WATER (ft) 0 HR. NA 24 HR. NA	
BORING NO.: B-604(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core			
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 396,916 US ft (NAD83/90)				EASTING: 876,592 US ft (NAD83/90)			
TOTAL DEPTH: 165.0 ft				CASING DEPTH: 4" to 29.0'						HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 3/19/08			COMPLETED: 3/23/08			CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)			

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-115.3	113.8	5.0	1:12 0:58 1:04 1:02 2:00	(3.1) 62%	(1.5) 30%	RUN-16				LIMESTONE, boundstone, white (10YR8/1), hard, moderately indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-120.3	118.8	5.0	0:54 0:57 0:49 0:46 0:18	(0.5) 10%	(0.5) 10%	RUN-17	(0.0) 0%	(NA)		Silty SAND (SM), greenish gray (10Y6/1), medium dense, moist, some fines, fine grained sand, strong HCl reaction (Tamiami Formation)
										Coring Terminated at Elevation -120.3

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



B-604 (DH) – Box 1



B-604 (DH) – Box 2



B-604 (DH) – Box 3



B-604 (DH) – Box 4



GEOTECHNICAL BORING LOG

Prepared By APX Date 8-19-08Checked By SW Date 8/19/08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: B. Taylor/L. Bisson		
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550 (ATL)					DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)	
BORING NO.: B-605					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.7 ft (NAVD88)					NORTHING: 396,917 US ft (NAD83/90)					EASTING: 876,694 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 201.0 ft			BORING DIAMETER: 4" to 36.0', 3" to 201.0'					CASING DEPTH: 4" to 36.0', 3" to 119.9'				HAMMER (ID): 140 lb. Auto (MEC-03)			
DATE STARTED: 2/23/08			COMPLETED: 2/27/08			CORE SIZE: HQ3			BITS USED: 3 7/8" and 2 15/16" Tricones						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	▼ MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-1.7					Ground Surface										
-1.7	0.0	WOR	WOR	WOR	●0						605-1			-1.7	0.0
-4.2	2.5										605-2			-4.2	2.5
-6.7	5.0	2	6	8	●14						605-3				
-9.2	7.5	7	7	8	●15						605-4				
-11.7	10.0	3	25	9			●34				605-5				
-14.2	12.5	3	10	5	●15						605-6				
-16.7	15.0	3	6	9	●15						605-7				
		8	13	10	●23									15.0ft: light gray (10YR7/1), soft	
-21.7	20.0	3	8	8	●16						605-8			20.0ft: very soft, trace calcite crystals	
-26.7	25.0	5	22	28			●50				605-9			-25.7	24.0
-31.7	30.0	16	13	4	●17						605-10			LIMESTONE, boundstone, white (10YR8/1), moderately hard, moist, trace shell fragments (Upper Fort Thompson Formation)	
-36.7	35.0													30.0ft: very pale brown (10YR8/2), very soft, coralline	
-37.9	36.2	11	36	50/0.2							605-11			33.0ft: loss of circulation	
-39.8	38.1									86/0.7	RUN-1			35.0ft: white (10YR8/1), hard	
											RUN-2			36.2ft: Switch sampling method to coring	
-44.8	43.1										RUN-3			36.2ft: medium hard, moderately indurated, fossiliferous, few vugs	
-49.8	48.1													43.1ft: hard, moderately indurated, recrystallized calcite	
-54.8	53.1										RUN-4			-49.8	48.1
-59.8	58.1										RUN-5			LIMESTONE, boundstone, white (10YR8/1), hard, indurated, little vugs, some shells, trace recrystallized calcite in vugs (Lower Fort Thompson Formation)	
-64.8	63.1										RUN-6			53.1ft: medium hard, moderately indurated	
-69.8	68.1										RUN-7				
-74.8	73.1										RUN-8			63.1ft: few vugs	
-75.6	73.9										RUN-9			68.1ft: mottled light gray (10YR7/1), some vugs, interbedded sand	

TURKEY POINT COL BORE: TURKEY POINT.GPJ TURKEY POINT COL.GDT 8-18-08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: B. Taylor/L. Bisson		
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (ATL)			DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft) 0 HR. NA 24 HR. NA		
BORING NO.: B-605			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core					
GROUND ELEV.: -1.7 ft (NAVD88)			NORTHING: 396,917 US ft (NAD83/90)			EASTING: 876,694 US ft (NAD83/90)			HAMMER (ID): 140 lb. Auto (MEC-03)		
TOTAL DEPTH: 201.0 ft			BORING DIAMETER: 4" to 36.0', 3" to 201.0'			CASING DEPTH: 4" to 36.0', 3" to 119.9'			BITS USED: 3 7/8" and 2 15/16" Tricones		
DATE STARTED: 2/23/08			COMPLETED: 2/27/08			CORE SIZE: HQ3					

ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				
-76.5					Continued from previous page									
-80.6	78.9													73.9ft: hard, indurated, mostly vugs LIMESTONE, boundstone, white (10YR8/1), hard, indurated, little vugs, some shells, trace recrystallized calcite in vugs (Lower Fort Thompson Formation) (continued)
-85.6	83.9													83.9ft: moderately indurated
-90.6	88.9													88.9ft: moderately hard, indurated, few vugs
-94.6	92.9													92.9ft: trace vugs, trace sand
-95.6	93.9													
-100.6	98.9													
-105.6	103.9													103.9ft: hard, shell molds and casts
-110.6	108.9													108.9ft: moderately hard
-115.6	113.9													
-121.6	119.9	9	8	11										113.9ft: light gray (2.5Y7/2), hard Sandy SILT (ML), light gray (2.5Y7/1), very stiff, wet, fine to medium grained sand, strong HCl reaction (Tamiami Formation)
-126.6	124.9	4	9	12										119.9ft: Switch sampling method to SPT
-131.6	129.9													
-133.1	131.4	3	5	8										
-136.6	134.9	9	15	22										
-141.6	139.9	8	12	19										
-146.6	144.9	7	10	14										

TURKEY POINT COL BORE TURKEY POINT COL GDT 8'18.08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: B. Taylor/L. Bisson				
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft)			
BORING NO.: B-605				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core			0 HR. NA			
GROUND ELEV.: -1.7 ft (NAVD88)				NORTHING: 396,917 US ft (NAD83/90)				EASTING: 876,694 US ft (NAD83/90)			24 HR. NA			
TOTAL DEPTH: 201.0 ft			BORING DIAMETER: 4" to 36.0', 3" to 201.0'				CASING DEPTH: 4" to 36.0', 3" to 119.9'			HAMMER (ID): 140 lb. Auto (MEC-03)				
DATE STARTED: 2/23/08			COMPLETED: 2/27/08			CORE SIZE: HQ3			BITS USED: 3 7/8" and 2 15/16" Tricones					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI	G		
-151.3					Continued from previous page									
-151.6	149.9	5	6	11							605-19		Silty SAND (SM), greenish gray (10Y5/1), medium dense, fine grained sand, strong HCl reaction (continued)	
-156.6	154.9	4	5	7							605-20		154.9ft: fine grained sand	
-161.2	159.5	3	4	6							605-21		159.5ft: loose	
-166.2	164.5	3	4	5							605-22	-166.2	164.5	Sandy SILT (ML), greenish gray (10Y5/1), firm, wet, fine to medium grained sand, strong HCl reaction
-171.2	169.5	2	3	6							605-23		169.5ft: no recovery	
-176.2	174.5	2	3	5							605-24		174.5ft: some fine grained sand	
-181.2	179.5	2	2	4							605-25		177.5ft: olive gray (5Y5/2)	
-186.2	184.5	2	3	5							605-26		184.5ft: fine to medium grained sand	
-191.2	189.5	3	3	6							605-27		187.5ft: olive gray (5Y5/2), fine grained sand,	
-196.2	194.5	4	5	13							605-28	-196.2	194.5	Sandy, Silty CLAY (CL), olive gray (5Y4/2), very stiff, moist, fine to medium grained sand, weak HCl reaction
-201.2	199.5	4	4	17							605-29	-201.2	199.5	Sandy SILT (ML), olive gray (5Y4/2), very stiff, moist, fine to coarse grained sand
												-202.7	201.0	Boring Terminated at Elevation -202.7 ft

TURKEY POINT COL BORE: TURKEY POINT GPJ TURKEY POINT COL GDI 8/18/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: B. Taylor/L. Bisson	
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros		GROUND WATER (ft)	
BORING NO.: B-605				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: -1.7 ft (NAVD88)				NORTHING: 396,917 US ft (NAD83/90)				EASTING: 876,694 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 201.0 ft				CASING DEPTH: 4" to 36.0', 3" to 119.9'						HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 2/23/08		COMPLETED: 2/27/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)					
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %RQD (ft) %		SAMP. NO.	STRATA REC. (ft) %RQD (ft) %		L O G	DESCRIPTION AND REMARKS	
										Begin Coring @ 36.2 ft	
-37.9	36.2	1.9	1:20	(1.9)	(1.9)	RUN-1	(11.6)	(11.4)		LIMESTONE, boundstone, white (10YR8/1), moderately hard, moist, trace shell fragments (Upper Fort Thompson Formation) (continued)	
-39.8	38.1	5.0	1:50/0.9	100%	100%	RUN-2	97%	96%		36.2ft: medium hard, moderately indurated, fossiliferous, few vugs	
			1:26	(4.7)	(4.5)					NOTE: Coring began at 35.1 ft though previous SPT. Only material below SPT depth is included in log.	
			1:17	94%	90%						
			0:57								
			0:50								
-44.8	43.1		0:48								
		5.0	0:39	(5.0)	(5.0)	RUN-3				43.1ft: hard, moderately indurated, recrystallized calcite	
			0:38	100%	100%						
			0:45								
			0:44								
-49.8	48.1		0:50								
		5.0	1:01	(5.0)	(5.0)	RUN-4	(52.7)	(36.3)		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, little vugs, some shells, trace recrystallized calcite in vugs (Lower Fort Thompson Formation)	
			1:04	100%	100%		79%	54%			
			1:01								
			1:00								
-54.8	53.1		1:24								
		5.0	0:46	(4.9)	(4.2)	RUN-5				53.1ft: medium hard, moderately indurated	
			0:43	98%	84%						
			0:32								
			0:16								
-59.8	58.1		0:37								
		5.0	0:21	(3.4)	(1.9)	RUN-6					
			0:24	68%	38%						
			0:20								
			0:15								
-64.8	63.1		0:15								
		5.0	0:21	(3.9)	(2.9)	RUN-7				63.1ft: few vugs	
			0:19	78%	58%						
			0:23								
			0:26								
-69.8	68.1		0:13								
		5.0	0:29	(2.4)	(0.6)	RUN-8				68.1ft: mottled light gray (10YR7/1), some vugs, interbedded sand	
			0:10	48%	12%						
			0:16								
			0:24								
-74.8	73.1		0:28								
-75.6	73.9	0.8	0:24/0.8	(0.5)	(0.0)	RUN-9					
		5.0	0:15	63%	0%	RUN-10				73.9ft: hard, indurated, mostly vugs	
			0:25	(2.7)	(0.5)						
			0:25	54%	10%						
			0:20								
-80.6	78.9		0:26								
		5.0	0:29	(3.8)	(3.7)	RUN-11					
			0:57	76%	74%						
			0:55								
			0:51								
-85.6	83.9		0:23								
		5.0	0:15	(2.5)	(0.5)	RUN-12				83.9ft: moderately indurated	
			0:19	50%	10%						
			0:23								
			0:19								
-90.6	88.9		0:38								
		4.0	0:53	(3.8)	(2.5)	RUN-13				88.9ft: moderately hard, indurated, few vugs	
			0:53	95%	63%						
			1:00								
-94.6	92.9		1:26								
-95.6	93.9	1.0	0:54	(0.6)	(0.5)	RUN-14				92.9ft: trace vugs, trace sand	
		5.0	0:33	60%	50%	RUN-15					
			0:41	(4.9)	(3.9)						
			0:35	98%	78%						
			0:37								
-100.6	98.9		0:38								
		5.0	0:39	(5.0)	(3.0)	RUN-16					
			0:52	100%	60%						
			0:46								
			0:51								
-105.6	103.9		1:06								
		5.0	0:51	(5.0)	(5.0)	RUN-17				103.9ft: hard, shell molds and casts	
			0:58	100%	100%						
			1:03								
			0:52								
-110.6	108.9		1:03								
		5.0	0:42	(3.6)	(2.1)	RUN-18				108.9ft: moderately hard	
			0:58	72%	42%						

TURKEY POINT COL CORE TURKEY POINT GP TURKEY POINT COL GDT 8 18 08

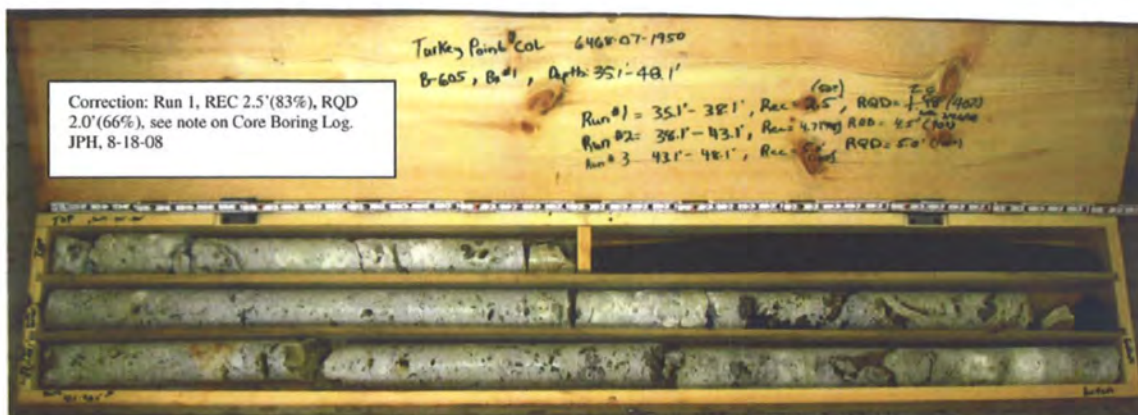


SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: B. Taylor/L. Bisson
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-605	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.7 ft (NAVD88)	NORTHING: 396,917 US ft (NAD83/90)	EASTING: 876,694 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 201.0 ft	CASING DEPTH: 4" to 36.0', 3" to 119.9'	HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 2/23/08	COMPLETED: 2/27/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
			0:55 0:21 1:22							Continued from previous page
-115.6	113.9		0:30 0:23 0:44 0:14 0:10	(0.7) 14%	(0.0) 0%	RUN-19	(0.0) 0%	(NA)		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, little vugs, some shells, trace recrystallized calcite in vugs (Lower Fort Thompson Formation) (continued) 113.9ft: light gray (2.5Y7/2), hard Sandy SILT (ML), light gray (2.5Y7/1), very stiff, wet, fine to medium grained sand, strong HCl reaction (Tamiami Formation)
-120.6	118.9	5.0								115.0 118.9 Coring Terminated at Elevation -120.6

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDI 8/18/08



B-605 - Box 1



B-605 - Box 2



B-605 - Box 3



B-605 - Box 4



B-605 - Box 5



B-605 - Box 6

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: L. Bisson				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550 (ATL)					DRILLER: L. Carter/ J. Landeros					GROUND WATER (ft)		
BORING NO.: B-606					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA		
GROUND ELEV.: -1.4 ft (NAVD88)					NORTHING: 396,959 US ft (NAD83/90)					EASTING: 876,738 US ft (NAD83/90)					24 HR. NA		
TOTAL DEPTH: 151.2 ft			BORING DIAMETER: 4" to 16.0', 3" to 151.2'					CASING DEPTH: 4" to 16.0', 3" to 125.9'					HAMMER (ID): 140 lb. Auto (MEC-03)				
DATE STARTED: 2/28/08			COMPLETED: 3/6/08			CORE SIZE: HQ3			BITS USED: 4" & 3" Roller Cones								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100							
-1.4					Ground Surface												
-1.4	0.0	WOR	WOR	WOR	0						606-1			-1.4	0.0		
-3.9	2.5										606-2A/B			-4.4	3.0		
-6.4	5.0	2	4	8							606-3						
-8.9	7.5	9	19	10							606-4						
-11.4	10.0	5	4	4							606-5						
-13.9	12.5	4	6	9							606-6						
-16.4	15.0	8	8	7							606-7						
-17.8	16.4	3	6	50/0.1							RUN-1						
-19.8	18.4										RUN-2						
-24.8	23.4										RUN-3			-25.4	24.0		
-28.8	27.4										RUN-4						
-29.8	28.4										RUN-5						
-32.8	31.4										RUN-6						
-33.3	31.9										RUN-7						
-34.8	33.4										606-CS-01						
											RUN-8						
-39.8	38.4										606-CS-02						
											RUN-9						
-44.8	43.4										RUN-10						
-46.4	45.0										RUN-11						
-49.8	48.4										RUN-12			-49.8	48.4		
-54.8	53.4										606-CS-04						
											RUN-13						
-59.8	58.4										RUN-14						
-64.8	63.4										RUN-15						
-68.8	67.4										RUN-16						
-69.8	68.4										RUN-17						
-74.8	73.4										RUN-18						

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5:30:08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: L. Bisson			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)	
BORING NO.: B-606				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 396,959 US ft (NAD83/90)				EASTING: 876,738 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 151.2 ft		BORING DIAMETER: 4" to 16.0', 3" to 151.2'				CASING DEPTH: 4" to 16.0', 3" to 125.9'				HAMMER (ID):140 lb. Auto (MEC-03)			
DATE STARTED: 2/28/08		COMPLETED: 3/6/08		CORE SIZE: HQ3				BITS USED: 4" & 3" Roller Cones					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-76.2					Continued from previous page								
-79.8	78.4										606-CS-05		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few vugs (Lower Fort Thompson Formation) (continued)
											RUN-19		
-84.8	83.4										606-CS-06		
											RUN-20		
-89.8	88.4												88.4ft: white (2.5Y8/1), moderately hard, trace sand
											RUN-21		
-94.8	93.4												93.4ft: white (2.5Y8/1), to very pale brown (2.5Y8/2), hard, trace vugs
											RUN-22		
-99.8	98.4												98.4ft: white (10YR8/1)
											RUN-23		
-104.8	103.4												
											RUN-24		
-109.8	108.4												108.4ft: white (5Y8/1)
											RUN-25		
-114.8	113.4												
											RUN-26		
-119.8	118.4												117.4 Silty SAND (SM), greenish gray (10Y6/1), medium dense, wet, fine grained sand, strong HCl reaction, trace shell fragments (Tamiami Formation) 119.4ft: fine to coarse grained sand, fine gravel
		2	6	5							606-8		
-131.1	129.7												
		3	6	13							606-9		
-141.1	139.7												139.7ft: olive gray (5Y5/2), dense
		12	12	19							606-10		
-151.1	149.7												

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDI 5-30 08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: L. Bisson						
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (ATL)			DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft)						
BORING NO.: B-606			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA						
GROUND ELEV.: -1.4 ft (NAVD88)			NORTHING: 396,959 US ft (NAD83/90)			EASTING: 876,738 US ft (NAD83/90)			24 HR. NA						
TOTAL DEPTH: 151.2 ft		BORING DIAMETER: 4" to 16.0', 3" to 151.2'			CASING DEPTH: 4" to 16.0', 3" to 125.9'			HAMMER (ID): 140 lb. Auto (MEC-03)							
DATE STARTED: 2/28/08		COMPLETED: 3/6/08			CORE SIZE: HQ3			BITS USED: 4" & 3" Roller Cones							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-151.0					Continued from previous page										
		4	7	7	14						606-11			-152.6 149.7ft: olive gray (5Y4/2), medium dense, fine to medium grained sand Boring Terminated at Elevation -152.6 ft	151.2

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: L. Bisson			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)	
BORING NO.: B-606				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 396,959 US ft (NAD83/90)				EASTING: 876,738 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 151.2 ft				CASING DEPTH: 4" to 16.0', 3" to 125.9'						HAMMER (ID): 140 lb. Auto (MEC-03)			
DATE STARTED: 2/28/08		COMPLETED: 3/6/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %RQD (ft) %		SAMP. NO.	STRATA REC (ft) %RQD (ft) %		L O G	DESCRIPTION AND REMARKS			
										Begin Coring @ 16.4 ft			
-17.8 -19.8	16.4 18.4	2.0 5.0	0:54 1:21 0:49 0:45 0:32 0:28 0:42	(2.0) 100% (5.0) 100%	(1.2) 60% (3.9) 78%	RUN-1 RUN-2	(7.0) 92% (5.1) 67%			LIMESTONE, boundstone, white (10YR8/1), to light gray (10YR7/1), very soft, wet trace calcite crystals, trace shell fragments (Miami Formation) (continued) 16.4ft: light gray (10YR7/2), hard, indurated, fossiliferous, strong HCl reaction, little vugs 18.4ft: white (10YR8/1), to light gray (10YR8/2)			
-24.8	23.4	4.0	0:33 0:29 0:52 0:30	(3.2) 80%	(0.7) 18%	RUN-3	(21.4) 88%	(13.3) 55%	-25.4	LIMESTONE, boundstone, light gray (10YR7/2), hard, indurated, coralline, fossiliferous, strong HCl reaction, few vugs (Upper Fort Thompson Formation)			
-28.8 -29.8	27.4 28.4	1.0 3.0	0:18 1:18 0:45 1:16	(1.0) 100% (2.0) 67%	(0.0) 0% (0.5) 17%	RUN-4 RUN-5				27.4ft: light gray (10YR7/2) 28.4ft: light gray (10YR7/2), to pale brown (10YR6/3), some friable cemented sand			
-32.8 -33.3 -34.8	31.4 31.9 33.4	0.5 1.5 5.0	0:52/0.5 0:51/0.5 1:14 1:06 0:46 0:42 0:33 0:41	(0.5) 100% (1.5) 100%	(0.0) 0% (1.5) 100%	RUN-6 RUN-7 606-CS-01 RUN-8 606-CS-02				31.4ft: white (10YR8/1), soft to hard, friable to indurated, trace vugs 31.9ft: white (10YR8/1), to pale brown (10YR6/3), hard, indurated 33.4ft: white (10YR8/1), to light gray (10YR7/1), few vugs			
-39.8	38.4	5.0	0:58 0:55 1:02 0:57 1:00	(5.0) 100%	(4.7) 94%	RUN-9				38.4ft: white (10YR8/1)			
-44.8 -46.4	43.4 45.0	1.6 3.4	0:48 0:51/0.6 0:03/0.4 1:21 1:26	(0.0) 0% (3.4) 100%	(0.0) 0% (2.0) 59%	RUN-10 RUN-11				43.4ft: no recovery (limestone) 45ft: grayish brown (10YR5/2), to light gray (10YR7/1) from 46.0ft to 48.4ft			
-49.8	48.4	5.0	1:26 1:35 1:43 1:44 2:02 1:45	(4.9) 98%	(4.9) 98%	RUN-12	(56.8) 84%	(35.2) 52%	-49.8	LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few vugs (Lower Fort Thompson Formation)			
-54.8	53.4	5.0	1:02 0:38 0:41 0:15 0:31	(4.7) 94%	(3.7) 74%	RUN-13				53.4ft: trace coral			
-59.8	58.4	5.0	0:29 0:28 0:27 0:18 0:28	(4.7) 94%	(2.3) 46%	RUN-14				63.4ft: white (10YR8/1), to light gray (10YR7/1)			
-64.8	63.4	4.0	0:43 0:37 0:38 1:09	(2.8) 70%	(1.2) 30%	RUN-15				67.4ft: no recovery (limestone) 68.4ft: light gray (10YR7/1)			
-68.8 -69.8	67.4 68.4	1.0 5.0	0:24 1:22 0:27 0:37 1:37 0:07	(0.0) 0% (2.8) 56%	(0.0) 0% (1.8) 36%	RUN-16 RUN-17				73.4ft: white (10YR8/1), trace vugs			
-74.8	73.4	5.0	0:03 0:04 1:58 2:23 1:48	(3.0) 60%	(2.4) 48%	RUN-18 606-CS-05				79.8ft: white (10YR8/1), trace vugs			
-79.8	78.4	5.0	1:18 1:15 1:16 1:04 0:52	(5.0) 100%	(3.3) 66%	RUN-19 606-CS-06				84.8ft: white (2.5Y8/1), moderately hard, trace sand			
-84.8	83.4	5.0	0:43 0:58 1:52 1:43 2:07	(5.0) 100%	(3.1) 62%	RUN-20							
-89.8	88.4	5.0	1:36 0:32 1:16	(4.7) 94%	(2.8) 56%	RUN-21							

TURKEY POINT COL CORE TURKEY POINT GPT TURKEY POINT COL GDT 5/30/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: L. Bisson
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-606	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 396,959 US ft (NAD83/90)	EASTING: 876,738 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.2 ft	CASING DEPTH: 4" to 16.0', 3" to 125.9'	HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 2/28/08	COMPLETED: 3/6/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-94.8	93.4		0:46 1:30							LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few vugs (Lower Fort Thompson Formation) (continued)
		5.0	1:12 0:31 0:28 0:04 0:45	(4.0) 80%	(2.5) 50%	RUN-22				93.4ft: white (2.5Y8/1), to very pale brown (2.5Y8/2), hard, trace vugs
-99.8	98.4									
		5.0	0:52 1:14 1:18 0:59 1:49	(5.0) 100%	(2.6) 52%	RUN-23				98.4ft: white (10YR8/1)
-104.8	103.4									
		5.0	1:19 0:56 0:39 0:45 0:41	(5.0) 100%	(2.9) 58%	RUN-24				
-109.8	108.4									
		5.0	0:34 0:58 0:36 0:43 0:22	(3.8) 76%	(1.7) 34%	RUN-25				108.4ft: white (5Y8/1)
-114.8	113.4									
		5.0	0:23 0:18 0:12 0:16 0:07	(1.4) 28%	(0.0) 0%	RUN-26				
-119.8	118.4						(0.0) 0%	(NA)		-117.4 -119.8 Silty SAND (SM), greenish gray (10Y6/1), medium dense, wet, fine grained sand, strong HCl reaction, trace shell fragments (Tamiami Formation) Coring Terminated at Elevation -119.8

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5 30 08



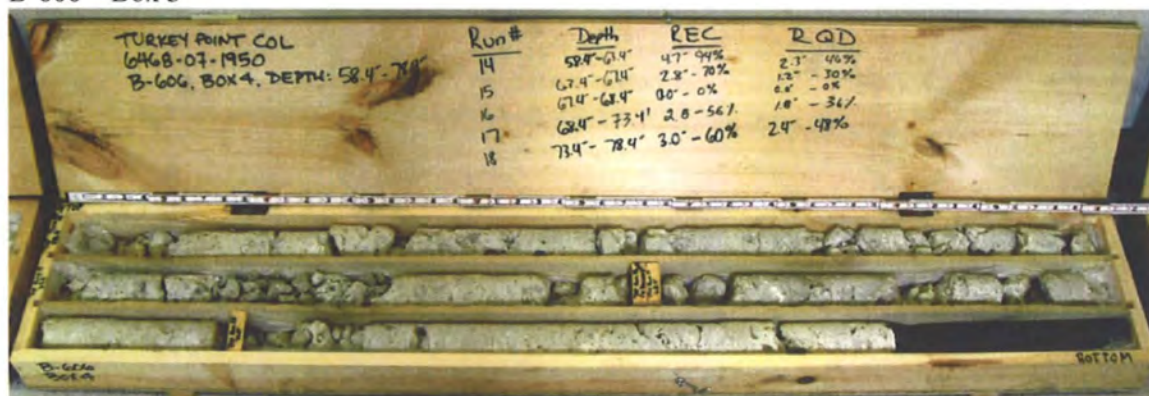
B-606 - Box 1



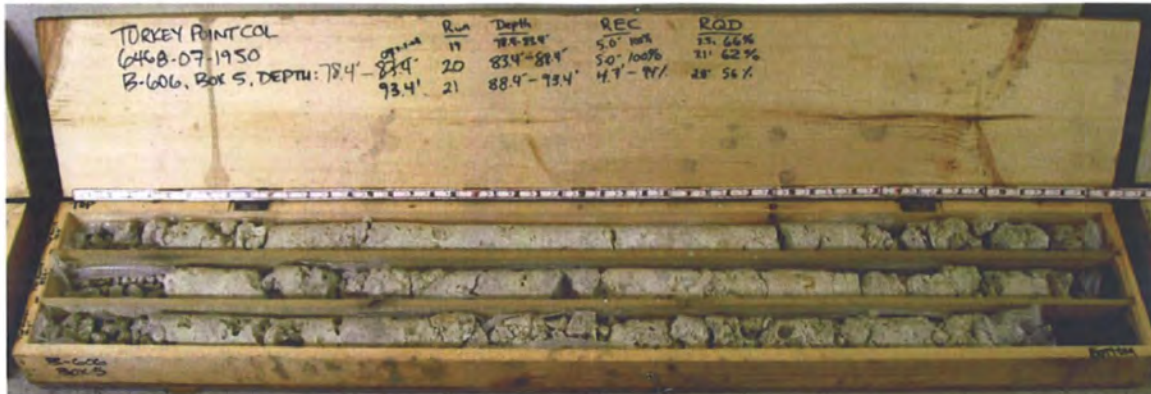
B-606 - Box 2



B-606 - Box 3



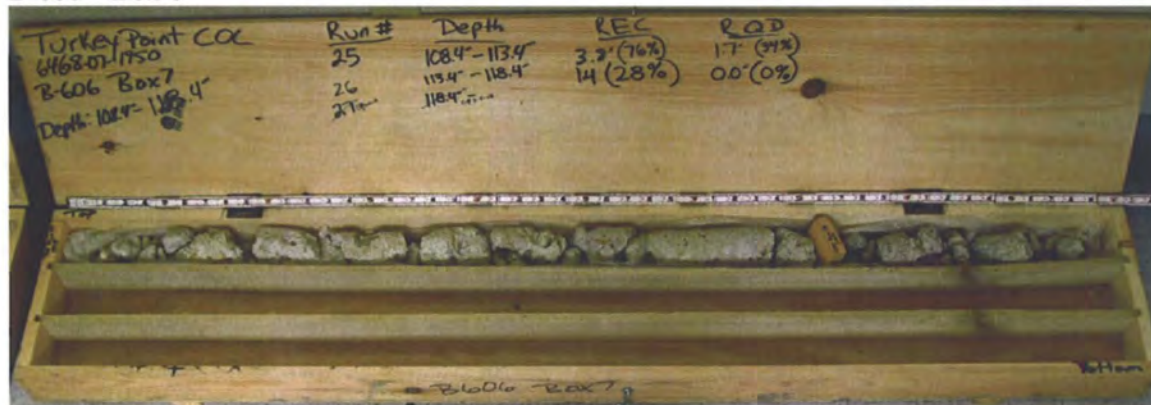
B-606 - Box 4



B-606 - Box 5



B-606 - Box 6



B-606 - Box 7



GEOTECHNICAL BORING LOG

Prepared By SP24 Date 7-10-08Checked By Tom Date 7-10-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: L. Bisson							
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550 (ATL)		DRILLER: L. Carter/ J. Landeros		GROUND WATER (ft)							
BORING NO.: B-607		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA							
GROUND ELEV.: -1.5 ft (NAVD88)		NORTHING: 396,830 US ft (NAD83/90)		EASTING: 876,644 US ft (NAD83/90)		24 HR. NA							
TOTAL DEPTH: 152.5 ft		BORING DIAMETER: 4" to 16.0', 3" to 152.5'		CASING DEPTH: 4" to 16.0', 3" to 120.0'		HAMMER (ID): 140 lb. Auto (MEC-03)							
DATE STARTED: 3/7/08		COMPLETED: 3/9/08		CORE SIZE: HQ3		BITS USED: 4" & 3" Roller Cones							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-1.5					Ground Surface								-1.5 0.0
-1.5	0.0	WOR	WOR	WOR	0						607-1		MUCK, light brownish gray (2.5Y6/2), to dark
-4.0	2.5										607-2		olive brown (2.5Y3/3), to black (2.5Y2.5/1),
-6.5	5.0	2	10	14							607-3		very soft, wet, organic, trace roots and shell
-9.0	7.5	8	7	7							607-4		fragments, no HCl reaction
-11.5	10.0	8	6	4							607-5		LIMESTONE, boundstone, pale yellow
-14.0	12.5	4	4	4							607-6		(2.5Y8/2), soft, wet, trace fines, fossiliferous,
-16.5	15.0	6	10	18							607-7		strong HCl reaction, oolitic (Miami Formation)
-17.5	16.0	11	50/0.1								RUN-1		5.0ft: white (2.5Y8/1), very soft
-19.8	18.3										RUN-2		7.5ft: very pale brown (10YR8/2), to pale brown
-24.8	23.3										RUN-3		(10YR6/3), loose
-29.8	28.3										607-CS-01		10.0ft: white (2.5Y8/1)
-34.8	33.3										RUN-4		12.5ft: light gray (2.5Y7/1), soft
-39.8	38.3										RUN-5		15.0ft: very pale brown (10YR8/2), hard
-44.8	43.3										607-CS-02		16.0ft: Switch sampling method to coring
-49.8	48.3										RUN-6		16.0ft: white (2.5Y8/1), hard, indurated, trace
-54.8	53.3										607-CS-03		fines, fossiliferous, strong HCl reaction, locally
-59.8	58.3										RUN-7		inconnected vugs
-64.8	63.3										607-CS-04		LIMESTONE, boundstone, very pale brown
-69.8	68.3										RUN-8		(10YR8/2), hard, indurated, fossiliferous, trace
-74.8	73.3										607-CS-05		fines, strong HCl reaction, trace vugs (Upper
											RUN-9		Fort Thompson Formation)
											RUN-10		33.3ft: white (2.5Y8/1), extremely indurated,
											RUN-11		recrystallized calcite, few vugs
											RUN-12		38.3ft: indurated
											RUN-13		43.3ft: moderately hard, trace sand
													45.9ft: gray (2.5Y6/1) to 47.7ft
													47.7
													LIMESTONE, boundstone, white (2.5Y8/1),
													hard, indurated, fossiliferous, trace to few
													vugs, strong HCl reaction (Lower Fort
													Thompson Formation)
													53.3ft: medium hard to hard
													58.3ft: hard, trace vugs
													63.3ft: moderately hard, moderately indurated,
													sandy
													68.3ft: light gray (2.5Y7/2), indurated
													73.3ft: white (2.5Y8/1)

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 7/10/08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: L. Bisson					
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (ATL)			DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft)					
BORING NO.: B-607			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA					
GROUND ELEV.: -1.5 ft (NAVD88)			NORTHING: 396,830 US ft (NAD83/90)			EASTING: 876,644 US ft (NAD83/90)			24 HR. NA					
TOTAL DEPTH: 152.5 ft			BORING DIAMETER: 4" to 16.0', 3" to 152.5'			CASING DEPTH: 4" to 16.0', 3" to 120.0'			HAMMER (ID): 140 lb. Auto (MEC-03)					
DATE STARTED: 3/7/08			COMPLETED: 3/9/08			CORE SIZE: HQ3			BITS USED: 4" & 3" Roller Cones					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI			
-76.3					Continued from previous page									
-79.8	78.3									RUN-14		LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, trace to few vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued) 78.3ft: moderately indurated 80.3ft: hard, indurated, trace sand, few vugs		
-81.8	80.3									RUN-15				
-84.8	83.3									RUN-16				
-89.8	88.3									RUN-17				
-94.8	93.3									RUN-18		88.3ft: moderately hard to hard		
-99.8	98.3									RUN-19				
-104.8	103.3									607-CS-06				
-109.8	108.3									RUN-20				
-114.8	113.3									RUN-21		108.3ft: hard to soft, indurated to friable		
-119.8	118.3	5	11	10						RUN-22				
-131.0	129.5	3	4	7						607-8		-116.5	115.0	Silty SAND (SM), light gray (2.5Y7/1), medium dense, wet, fine grained sand, strong HCl reaction, trace shell fragments (Tamiami Formation) 118.3ft: Switch sampling method to SPT
-141.0	139.5	9	10	12						607-9				129.5ft: olive (5Y5/3), weak to strong HCl reaction, fine to medium grained sand
-151.0	149.5									607-10		-141.0	139.5	Clayey, Silty SAND (SC-SM), olive (5Y5/3), medium dense, wet, weak HCl reaction, fine to coarse sand

TURKEY POINT COL BORE, TURKEY POINT GPJ, TURKEY POINT COL, GDT, 7/10/08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: L. Bisson					
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (ATL)			DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft)					
BORING NO.: B-607			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA					
GROUND ELEV.: -1.5 ft (NAVD88)			NORTHING: 396,830 US ft (NAD83/90)			EASTING: 876,644 US ft (NAD83/90)			24 HR. NA					
TOTAL DEPTH: 152.5 ft			BORING DIAMETER: 4" to 16.0', 3" to 152.5'			CASING DEPTH: 4" to 16.0', 3" to 120.0'			HAMMER (ID): 140 lb. Auto (MEC-03)					
DATE STARTED: 3/7/08			COMPLETED: 3/9/08			CORE SIZE: HQ3			BITS USED: 4" & 3" Roller Cones					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI			
-151.1					Continued from previous page									
-152.5	151.0	6	6	9						607-11		-152.5	149.5ft: weak to strong HCl reaction	151.0
		4	5	11						607-12		-154.0	Silty SAND (SC-SM), olive (5Y5/3), medium dense, wet, fine to coarse sand, fine gravel, weak HCl reaction	152.5
													Boring Terminated at Elevation - 154.0 ft	

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL.GPJ 7/10/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: L. Bisson			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)	
BORING NO.: B-607				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 396,830 US ft (NAD83/90)				EASTING: 876,644 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 152.5 ft				CASING DEPTH: 4" to 16.0', 3" to 120.0'						HAMMER (ID): 140 lb. Auto (MEC-03)			
DATE STARTED: 3/7/08		COMPLETED: 3/9/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS			
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %					
										Begin Coring @ 16.0 ft			
-17.5	16.0	2.3	1:54	(2.3)	(1.3)	RUN-1	(7.3)	(6.1)		LIMESTONE, boundstone, pale yellow (2.5Y8/2), soft, wet, trace fines, fossiliferous, strong HCl reaction, oolitic (Miami Formation) (continued) 16.0ft: white (2.5Y8/1), hard, indurated, trace fines, fossiliferous, strong HCl reaction, locally interconnected vugs			
-19.8	18.3	5.0	0.39/0.3	100%	57%		91%	76%					
			1.08	(5.0)	(4.8)	RUN-2							
			1:02	100%	96%								
			0:47										
			0:36										
-24.8	23.3	5.0	1:01	(3.8)	(3.3)	RUN-3	(23.2)	(21.5)		-25.5 ----- 24.0			
			0:27	76%	66%	607-CS-01	98%	91%		LIMESTONE, boundstone, very pale brown (10YR8/2), hard, indurated, fossiliferous, trace fines, strong HCl reaction, trace vugs (Upper Fort Thompson Formation)			
			0:17										
			0:28										
			0:28										
			0:35										
-29.8	28.3	5.0	0:43	(5.0)	(4.6)	RUN-4							
			0:58	100%	92%								
			1:02										
			1:03										
-34.8	33.3	5.0	0:59	(5.0)	(4.9)	RUN-5				33.3ft: white (2.5Y8/1), extremely indurated, recrystallized calcite, few vugs			
			0:49	100%	98%	607-CS-02							
			1:11										
			1:01										
			1:32										
			1:48										
-39.8	38.3	5.0	1:28	(5.0)	(4.7)	RUN-6				38.3ft: indurated			
			1:54	100%	94%	607-CS-03							
			1:57										
			1:36										
			0:56										
-44.8	43.3	5.0	0:30	(5.0)	(4.6)	RUN-7				43.3ft: moderately hard, trace sand			
			1:33	100%	92%								
			1:28										
			2:39										
			1:43							45.9ft: gray (2.5Y6/1) to 47.7ft			
-49.8	48.3	5.0	0:52	(5.0)	(4.5)	RUN-8	(53.4)	(36.3)		-49.2 ----- 47.7			
			1:07	100%	90%	607-CS-04	79%	54%		LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, trace to few vugs, strong HCl reaction (Lower Fort Thompson Formation)			
			1:25										
			1:10										
			1:00										
-54.8	53.3	5.0	0:31	(3.1)	(3.0)	RUN-9				53.3ft: medium hard to hard			
			0:40	62%	60%								
			0:48										
			0:16										
			1:52										
-59.8	58.3	5.0	1:02	(5.0)	(3.8)	RUN-10				58.3ft: hard, trace vugs			
			0:53	100%	76%	607-CS-05							
			1:17										
			0:59										
			0:49										
-64.8	63.3	5.0	0:30	(3.0)	(0.7)	RUN-11				63.3ft: moderately hard, moderately indurated, sandy			
			0:08	60%	14%								
			0:43										
			0:39										
			0:25										
-69.8	68.3	5.0	0:22	(3.0)	(0.8)	RUN-12				68.3ft: light gray (2.5Y7/2), indurated			
			1:02	60%	16%								
			0:15										
			2:04										
			1:31										
-74.8	73.3	5.0	0:44	(1.7)	(0.4)	RUN-13				73.3ft: white (2.5Y8/1)			
			1:09	34%	8%								
			0:48										
			1:09										
			1:56										
-79.8	78.3	2.0	1:08	(1.3)	(0.8)	RUN-14				78.3ft: moderately indurated			
			1:09	65%	40%								
			1:08	(3.0)	(1.9)	RUN-15				80.3ft: hard, indurated, trace sand, few vugs			
			1:48	100%	63%								
			1:09										
-84.8	83.3	3.0	0:44	(4.7)	(3.4)	RUN-16							
			0:34	94%	68%								
			1:42										
			1:42										
			1:09										
-89.8	88.3	5.0	0:58	(5.0)	(3.3)	RUN-17				88.3ft: moderately hard to hard			
			0:51	100%	66%								

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 7/10/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: L. Bisson			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)	
BORING NO.: B-607				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 396,830 US ft (NAD83/90)				EASTING: 876,644 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 152.5 ft				CASING DEPTH: 4" to 16.0', 3" to 120.0'						HAMMER (ID): 140 lb. Auto (MEC-03)			
DATE STARTED: 3/7/08			COMPLETED: 3/9/08			CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)					
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %RQD (ft) %		SAMP. NO.	STRATA REC (ft) %RQD (ft) %		L O G	DESCRIPTION AND REMARKS			
										Continued from previous page			
-94.8	93.3		0:54 0:55 0:33							LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, trace to few vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)			
		5.0	0:19 0:50 1:07 1:40 1:39	(4.2) 84%	(3.7) 74%	RUN-18							
-99.8	98.3	5.0	0:40 1:50 1:45 1:58 0:58	(5.0) 100%	(3.5) 70%	RUN-19 607-CS-06							
-104.8	103.3	5.0	0:40 1:02 0:59 0:47 0:56	(5.0) 100%	(4.3) 86%	RUN-20							
-109.8	108.3	5.0	0:30 0:34 0:38 0:50 0:55	(3.8) 76%	(1.6) 32%	RUN-21					108.3ft: hard to soft, indurated to friable		
-114.8	113.3	5.0	0:42 0:32 0:24 0:08 0:10	(0.0) 0%	(0.0) 0%	RUN-22							
-119.8	118.3						(0.0) 0%	(NA)			-116.5	115.0	Silty SAND (SM), light gray (2.5Y7/1), medium dense, wet, fine grained sand, strong HCl reaction, trace shell fragments (Tamiami Formation)
											-119.8	118.3	Coring Terminated at Elevation -119.8

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 7:10:08



B-607 - Box 1



B-607 - Box 2



B-607 - Box 3



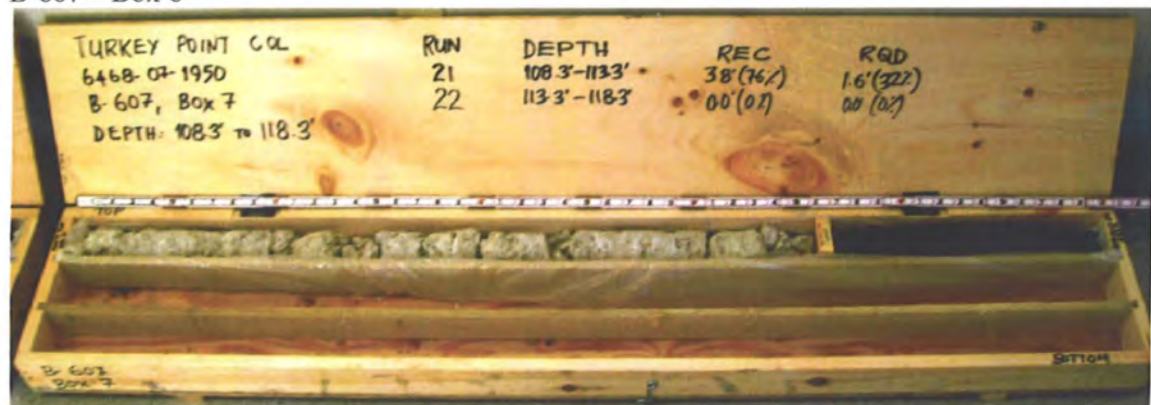
B-607 - Box 4



B-607 – Box 5



B-607 – Box 6



B-607 – Box 7



GEOTECHNICAL BORING LOG

Prepared By APK Date 5-30-08Checked By WMM Date 9-22-08

SHEET 1 OF 4

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade				GEOLOGIST: S. Woodham/B. Taylor			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550X (ATL)				DRILLER: R. Landeros/ N. Rodriguez				GROUND WATER (ft)			
BORING NO.: B-608(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA			
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 396,830 US ft (NAD83/90)				EASTING: 876,736 US ft (NAD83/90)				24 HR. NA			
TOTAL DEPTH: 265.4 ft				BORING DIAMETER: 5" to 34.0', 4" to 265.4'				CASING DEPTH: 4" to 117.0'				HAMMER (ID):140 lb. Auto (MEC-05)			
DATE STARTED: 3/25/08				COMPLETED: 4/2/08				CORE SIZE: HQ3				BITS USED: 4 7/8" & 3 7/8" Roller Cones			
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80					100	
-1.5					Ground Surface										
-1.5	0.0	WOH	WOH	WOH	WOH								-1.5	0.0	Muck; no recovery
-5.0	3.5														3.5ft: very dark brown (10YR2/2), very soft, wet, organics
-7.5	6.0	2	9	7											4.5
-10.0	8.5	6	7	6											LIMESTONE, very pale yellow (10YR8/2), very soft, wet, strong HCl reaction, trace fines, oolitic (Miami Formation)
-12.0	10.5	12	12	2											8.5ft: light gray (7.5YR7/1)
-15.0	13.5	5	3	2											10.5ft: white (2.5Y8/1)
		10	7	10											
-20.0	18.5														
		24	25	10											18.5ft: medium hard
-25.0	23.5														
		18	10	7											23.5ft: very soft
-30.0	28.5														26.0
		1	2	1											LIMESTONE, boundstone, pale yellow (5Y8/3), very soft, wet, coarse grained sand, strong HCl reaction (Upper Fort Thompson Formation)
-34.0	32.5														26.0ft: loss of circulation
-35.5	34.0	31	7	17											32.5ft: white (2.5Y8/1), soft
															34.0ft: Switch sampling method to coring
-38.8	37.3														34.0ft: white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, trace calcite recrystallization, coralline, little vugs
-43.8	42.3														
															42.3ft: white (10YR8/1) to gray (10YR6/1) at 44.4ft to 46.8ft
-48.8	47.3														46.8
															LIMESTONE, boundstone, white (10YR8/1), moderately hard to hard, moderately indurated, fossiliferous, few vugs, strong HCl reaction (Lower Fort Thompson Formation)
-53.8	52.3														52.3ft: trace vugs, trace recrystallized calcite, trace coarse grained sand
-58.8	57.3														57.3ft: few vugs, few coarse grained sand
-63.8	62.3														62.3ft: soft to moderately hard, friable to moderately indurated, some coarse grained sand
-68.8	67.3														67.3ft: moderately hard, moderately indurated, few vugs
-73.8	72.3														72.3ft: moderately hard to hard, moderately indurated, trace vugs

TURKEY POINT COL BORE: TURKEY POINT COL GDT 5:30:08



SHEET 2 OF 4

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: S. Woodham/B. Taylor						
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550X (ATL)		DRILLER: R. Landeros/ N. Rodriguez		GROUND WATER (ft)						
BORING NO.: B-608(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA						
GROUND ELEV.: -1.5 ft (NAVD88)		NORTHING: 396,830 US ft (NAD83/90)		EASTING: 876,736 US ft (NAD83/90)		24 HR. NA						
TOTAL DEPTH: 265.4 ft		BORING DIAMETER: 5" to 34.0', 4" to 265.4'		CASING DEPTH: 4" to 117.0'		HAMMER (ID): 140 lb. Auto (MEC-05)						
DATE STARTED: 3/25/08		COMPLETED: 4/2/08		CORE SIZE: HQ3		BITS USED: 4 7/8" & 3 7/8" Roller Cones						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100		
-76.3		Continued from previous page										
-78.8	77.3											
-83.8	82.3											
-88.8	87.3											
-93.8	92.3											
-98.8	97.3											
-103.8	102.3											
-108.8	107.3											
-113.8	112.3											
-119.3	117.8	8	4	7								
-130.0	128.5	4	6	7								
-139.5	138.0	5	9	8								
-149.5	148.0	8	12	16								

LIMESTONE, boundstone, white (10YR8/1), moderately hard to hard, moderately indurated, fossiliferous, few vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)

77.3ft: moderately hard to hard, indurated, few vugs

82.3ft: hard, indurated

87.3ft: moderately hard, moderately indurated

92.3ft: hard, indurated

97.3ft: moderately hard to hard, few vugs, few to little shell molds and casts

102.3 to 103.3ft: sand layer

117.8ft: Switch sampling method to SPT

128.5ft: greenish gray (10Y6/1), moist, strong HCL reaction

116.5

115.0

148.0

149.5

RUN-10

RUN-11

RUN-12

RUN-13

RUN-14

RUN-15

608(DH)-CS-03

RUN-16

RUN-17

608(DH)-11

608(DH)-12

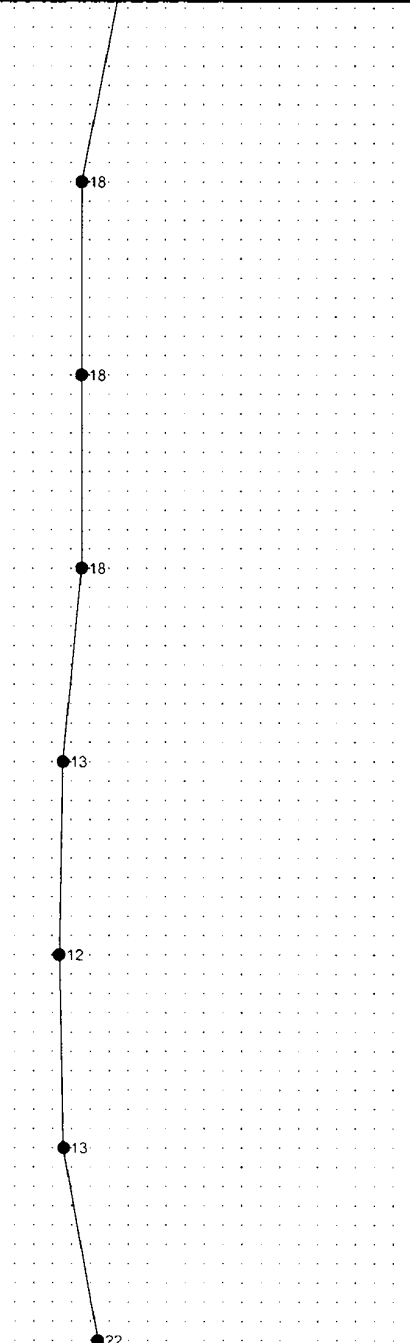
608(DH)-13

608(DH)-14

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



SHEET 3 OF 4

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade		GEOLOGIST: S. Woodham/B. Taylor			
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550X (ATL)					DRILLER: R. Landeros/ N. Rodriguez			GROUND WATER (ft) 0 HR. NA 24 HR. NA		
BORING NO.: B-608(DH)					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					
GROUND ELEV.: -1.5 ft (NAVD88)					NORTHING: 396,830 US ft (NAD83/90)					EASTING: 876,736 US ft (NAD83/90)					
TOTAL DEPTH: 265.4 ft			BORING DIAMETER: 5" to 34.0', 4" to 265.4'					CASING DEPTH: 4" to 117.0'			HAMMER (ID):140 lb. Auto (MEC-05)				
DATE STARTED: 3/25/08			COMPLETED: 4/2/08			CORE SIZE: HQ3			BITS USED: 4 7/8" & 3 7/8" Roller Cones						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	▼ MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-151.1					Continued from previous page										
-159.5	158.0	4	8	10							B08(DH)-15			POORLY GRADED SAND with silt (SP-SM), greenish gray (10Y6/1), medium dense, moist, strong HCL reaction, fine to medium grained sand, trace shell fragments (continued)	
-169.5	168.0	5	8	10							B08(DH)-16			168.0ft: dark greenish gray (5GY4/1), weak HCL reaction	
-179.5	178.0	3	5	13							B08(DH)-17		-179.5	178.0	Sandy SILT (ML), dark greenish gray (5GY4/1), very stiff, moist, fine grained sand, strong HCL reaction
-189.5	188.0	3	4	9							B08(DH)-18			188.0ft: weak HCL reaction	
-199.5	198.0	3	5	7							B08(DH)-19				
-209.5	208.0	5	4	9							B08(DH)-20			208.0ft: strong HCL reaction	
-219.5	218.0	7	11	11							B08(DH)-21		-216.5	215.0	Silty SAND (SM), greenish gray (10Y6/1), medium dense, moist, fine grained sand, strong HCL reaction (Hawthorn Group)

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5:30:08



SHEET 4 OF 4

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: S. Woodham/B. Taylor												
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550X (ATL)		DRILLER: R. Landeros/ N. Rodriguez		GROUND WATER (ft)												
BORING NO.: B-608(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA												
GROUND ELEV.: -1.5 ft (NAVD88)		NORTHING: 396,830 US ft (NAD83/90)		EASTING: 876,736 US ft (NAD83/90)		24 HR. NA												
TOTAL DEPTH: 265.4 ft		BORING DIAMETER: 5" to 34.0", 4" to 265.4'		CASING DEPTH: 4" to 117.0'		HAMMER (ID): 140 lb. Auto (MEC-05)												
DATE STARTED: 3/25/08		COMPLETED: 4/2/08		CORE SIZE: HQ3		BITS USED: 4 7/8" & 3 7/8" Roller Cones												
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION					
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100								
-225.9					Continued from previous page													
-229.5	228.0	24	48	50/0.3											608(DH)-22 98/0.8		Silty SAND (SM), greenish gray (10Y6/1), medium dense, moist, fine grained sand, strong HCl reaction (Hawthorn Group) (continued) 228.0ft: very dense, fine to medium grained sand	
-240.4	238.9	12	21	24											608(DH)-23 45		238.9ft: dark greenish gray (10Y4/1), dense, weak HCl reaction	
-250.4	248.9	19	27	27											608(DH)-24 54		248.9ft: greenish gray (10Y5/1), very dense, fine to medium grained sand, trace shell fragments, strong HCl reaction	
-265.4	263.9	12	21	27											608(DH)-25 48		263.9ft: dense Boring Terminated at Elevation -266.9 ft	

TURKEY POINT COL BORE: TURKEY POINT.GPJ TURKEY POINT COL.GDT 5-30-08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham/B. Taylor
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: R. Landeros/ N. Rodriguez	GROUND WATER (ft)
BORING NO.: B-608(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 396,830 US ft (NAD83/90)	EASTING: 876,736 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 265.4 ft	CASING DEPTH: 4" to 117.0'	HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 3/25/08	COMPLETED: 4/2/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	RQD (ft) %	SAMP. NO.	REC (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS
										Begin Coring @ 34.0 ft
-35.5	34.0	3.3	0.36	(2.6)	(0.9)	RUN-1	(12.1)	(8.3)		LIMESTONE, boundstone, pale yellow (5Y8/3), very soft, wet, coarse grained sand, strong HCl reaction (Upper Fort Thompson Formation)
-38.8	37.3		0.36	79%	27%		95%	65%		
		5.0	1.00/0.3	(5.0)	(3.2)	RUN-2				26.0ft: loss of circulation (<i>continued</i>)
			0.30	100%	64%					34.0ft: white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, trace calcite recrystallization, coralline, little vugs
-43.8	42.3		0.35							
		5.0	0.44			608(DH)-CS-01				42.3ft: white (10YR8/1) to gray (10YR6/1) at 44.4ft to 46.8ft
			1.07	(5.0)	(4.7)	RUN-3				
-48.8	47.3		1.56	100%	94%	608(DH)-CS-02				
		5.0	1.03	(5.0)	(4.5)	RUN-4	(47.6)	(25.5)		LIMESTONE, boundstone, white (10YR8/1), moderately hard to hard, moderately indurated, fossiliferous, few vugs, strong HCl reaction (Lower Fort Thompson Formation)
			1.08	100%	90%		70%	37%		
-53.8	52.3		0.44							
		5.0	0.47	(5.0)	(3.9)	RUN-5				52.3ft: trace vugs, trace recrystallized calcite, trace coarse grained sand
			1.24	100%	78%					
-58.8	57.3		1.00							
		5.0	0.45	(3.5)	(1.2)	RUN-6				57.3ft: few vugs, few coarse grained sand
			0.26	70%	24%					
-63.8	62.3		0.26							
		5.0	0.36	(2.8)	(0.0)	RUN-7				62.3ft: soft to moderately hard, friable to moderately indurated, some coarse grained sand
			0.17	56%	0%					
-68.8	67.3		1.43							
		5.0	1.10	(3.1)	(1.9)	RUN-8				67.3ft: moderately hard, moderately indurated, few vugs
			1.02	62%	38%					
-73.8	72.3		0.37							
		5.0	0.59	(3.4)	(0.9)	RUN-9				72.3ft: moderately hard to hard, moderately indurated, trace vugs
			0.25	68%	18%					
-78.8	77.3		0.18							
		5.0	0.53	(4.3)	(3.0)	RUN-10				77.3ft: moderately hard to hard, indurated, few vugs
			0.57	86%	60%					
-83.8	82.3		0.39							
		5.0	0.31	(0.3)	(0.0)	RUN-11				82.3ft: hard, indurated
			0.37	6%	0%					
-88.8	87.3		0.45							
		5.0	0.05	(1.1)	(0.0)	RUN-12				87.3ft: moderately hard, moderately indurated
			0.29	22%	0%					
-93.8	92.3		0.39							
		5.0	0.13	(3.6)	(1.0)	RUN-13				92.3ft: hard, indurated
			0.11	72%	20%					
-98.8	97.3		0.17							
		5.0	0.30	(4.8)	(3.3)	RUN-14				97.3ft: moderately hard to hard, few vugs, few to little shell molds and casts
			0.20	96%	66%					
-103.8	102.3		0.15							
		5.0	0.07	(5.0)	(4.2)	RUN-15				102.3 to 103.3ft: sand layer
			0.29	100%	84%					
-108.8	107.3		0.23			608(DH)-CS-03				
		5.0	0.25	(3.2)	(1.1)	RUN-16				
			0.30							

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL GDT 530.08



SHEET 2 OF 2

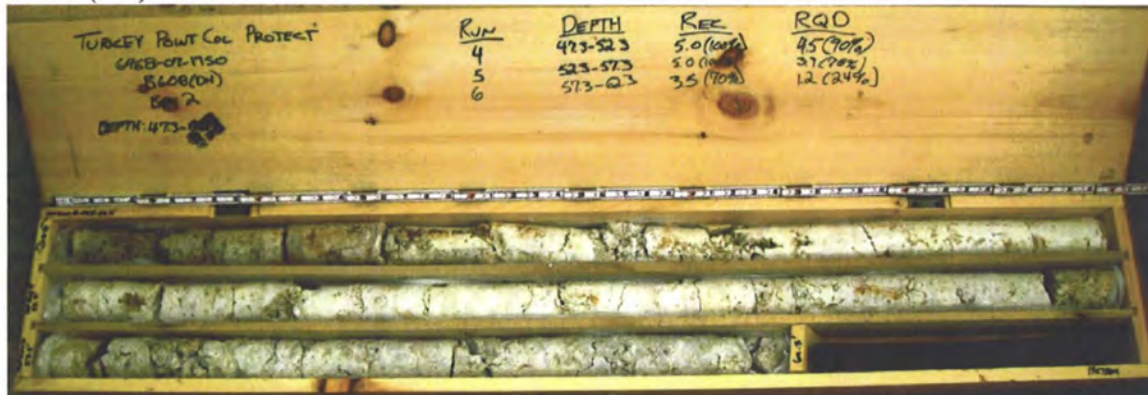
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham/B. Taylor
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: R. Landeros/ N. Rodriguez	GROUND WATER (ft)
BORING NO.: B-608(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 396,830 US ft (NAD83/90)	EASTING: 876,736 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 265.4 ft	CASING DEPTH: 4" to 117.0'	HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 3/25/08	COMPLETED: 4/2/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	RQD (ft) %	SAMP. NO.	REC (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS
										Continued from previous page
-113.8	112.3		0.30 0.40 0.18 0.48	64%	22%					LIMESTONE, boundstone, white (10YR8/1), moderately hard to hard, moderately indurated, fossiliferous, few vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)
		5.0	0.38 1.02 0.27 0.12 0.20	(2.0) 40%	(0.0) 0%	RUN-17				
-118.8	117.3						(0.0) 0%	(NA)		-116.5 -118.8
										Silty SAND (SM), pale yellow (2.5Y8/2), medium dense, wet, fine to medium grained sand (Tamiami Formation) Coring Terminated at Elevation -118.8

TURKEY POINT COL CORE, TURKEY POINT GPJ, TURKEY POINT COL GDT 53008



B-608 (DH) – Box 1



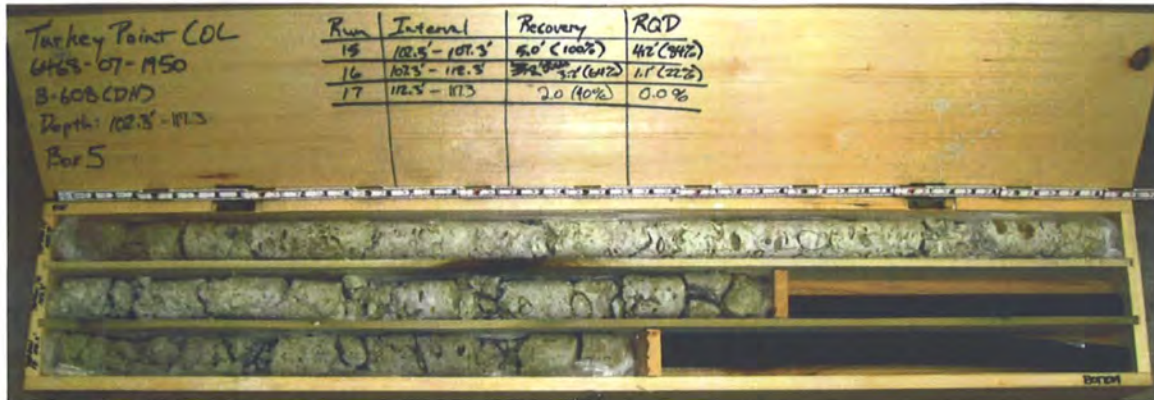
B-608 (DH) – Box 2



B-608 (DH) – Box 3



B-608 (DH) – Box 4



B-608 (DH) - Box 5

GEOTECHNICAL BORING LOG

Prepared By JPH Date 5.30.09

Checked By [Signature] Date 5-10-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: H. Lyatuu				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550 (ATL)					DRILLER: L. Carter/ J. Landeros					GROUND WATER (ft)		
BORING NO.: B-609					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA		
GROUND ELEV.: -1.5 ft (NAVD88)					NORTHING: 396,763 US ft (NAD83/90)					EASTING: 876,689 US ft (NAD83/90)					24 HR. NA		
TOTAL DEPTH: 150.7 ft			BORING DIAMETER: 4" to 25.0', 3" to 150.7'					CASING DEPTH: 4" to 25.0', 3" to 125.0'					HAMMER (ID):140 lb. Auto (MEC-03)				
DATE STARTED: 3/10/08			COMPLETED: 3/12/08			CORE SIZE: HQ3			BITS USED: 4" & 3" Roller Cones								
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	MOI	LOG	SOIL AND ROCK DESCRIPTION				
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				NO.			
					Ground Surface												
-1.5																	
-1.5	0.0	WOR	WOR	WOR	•0						609-1		-1.5				
-4.0	2.5				•8						609-2		-3.5				
		WOH	3	5													
-6.5	5.0										609-3						
		6	6	5													
-9.0	7.5				•11						609-4						
		2	2	3													
-11.5	10.0				•5						609-5						
		3	10	19													
-14.0	12.5										609-6						
		9	16	20													
-16.5	15.0										609-7						
		7	19	15													
-20.7	19.2																
		5	16	14							609-8						
-25.7	24.2																
-26.8	25.3	6	48	50/0.1							609-9		-25.5				
											RUN-1						
-29.6	28.1																
											RUN-2						
											609-CS-01						
											609-CS-02						
-34.6	33.1										RUN-3						
-39.6	38.1										RUN-4						
-44.6	43.1										RUN-5						
-49.6	48.1										RUN-6		-49.4				
-54.6	53.1										609-CS-04						
											RUN-7						
-59.6	58.1																
											RUN-8						
-64.6	63.1																
-65.6	64.1										RUN-9						
-66.1	64.6										RUN-10						
											RUN-11						
-69.6	68.1																
											RUN-12						
-73.6	72.1																
-74.6	73.1										RUN-13						
											RUN-14						



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: H. Lyatuu					
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (ATL)			DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft)					
BORING NO.: B-609			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA					
GROUND ELEV.: -1.5 ft (NAVD88)			NORTHING: 396,763 US ft (NAD83/90)			EASTING: 876,689 US ft (NAD83/90)			24 HR. NA					
TOTAL DEPTH: 150.7 ft			BORING DIAMETER: 4" to 25.0', 3" to 150.7'			CASING DEPTH: 4" to 25.0', 3" to 125.0'			HAMMER (ID): 140 lb. Auto (MEC-03)					
DATE STARTED: 3/10/08			COMPLETED: 3/12/08			CORE SIZE: HQ3			BITS USED: 4" & 3" Roller Cones					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				
-76.3					Continued from previous page									
-78.0	76.5													LIMESTONE, boundstone, very pale brown (10YR8/3) to white (10YR8/1), hard, indurated, trace to few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued) 76.5ft: white (2.5Y8/1)
-79.6	78.1													
-84.6	83.1													
-89.6	88.1													
-94.6	93.1													
-97.6	96.1													
-99.6	98.1													
-101.5	100.0													
-104.6	103.1													
-109.6	108.1													
-113.6	112.1													
-114.6	113.1													
-120.8	119.3	3	6	12										
-130.8	129.3	3	3	6										
-140.7	139.2	9	9	10										
-150.7	149.2													

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/3/08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: H. Lyatuu						
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (ATL)			DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft)						
BORING NO.: B-609			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA						
GROUND ELEV.: -1.5 ft (NAVD88)			NORTHING: 396,763 US ft (NAD83/90)			EASTING: 876,689 US ft (NAD83/90)			24 HR. NA						
TOTAL DEPTH: 150.7 ft			BORING DIAMETER: 4" to 25.0', 3" to 150.7'			CASING DEPTH: 4" to 25.0', 3" to 125.0'			HAMMER (ID): 140 lb. Auto (MEC-03)						
DATE STARTED: 3/10/08			COMPLETED: 3/12/08			CORE SIZE: HQ3			BITS USED: 4" & 3" Roller Cones						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-151.1					Continued from previous page										
		5	6	9	● 15						609-13		-152.2	150.7	
														Boring Terminated at Elevation -152.2 ft	

TURKEY POINT COL BORE, TURKEY POINT GPJ, TURKEY POINT COL GDI, 5/3/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: H. Lyatuu
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-609	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 396,763 US ft (NAD83/90)	EASTING: 876,689 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.7 ft	CASING DEPTH: 4" to 25.0', 3" to 125.0'	HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 3/10/08	COMPLETED: 3/12/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	ROD (ft) %	SAMP. NO.	STRATA REC (ft) %	ROD (ft) %	L O G	DESCRIPTION AND REMARKS
										Begin Coring @ 25.3 ft
-26.8	25.3	2.8	1:02 1:06 1:33/0.8	(2.8) 100%	(2.5) 89%	RUN-1	(21.8) 96%	(19.3) 85%		LIMESTONE, boundstone, white (10YR8/1), hard, wet, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation) (continued)
-29.6	28.1									25.3ft: white (7.5YR8/1), hard, indurated, fossiliferous, strong HCl reaction, coralline, few to little vugs
		5.0	0:57 0:58 1:15 1:20 0:45	(4.9) 98%	(4.7) 94%	RUN-2 609-CS-01 609-CS-02				
-34.6	33.1									33.1ft: white (10YR8/1)
		5.0	1:04 1:10 1:13 0:50 1:12	(5.0) 100%	(3.9) 78%	RUN-3				
-39.6	38.1									38.1ft: white (2.5Y8/1), recrystallized calcite
		5.0	1:09 0:53 1:26 1:25 1:46	(4.8) 96%	(4.3) 86%	RUN-4				
-44.6	43.1									43.1ft: white (2.5Y8/1), to gray (10YR6/1) from 46.1ft to 47.9ft
		5.0	0:42 0:45 1:22 1:28 1:22	(4.5) 90%	(3.9) 78%	RUN-5				
-49.6	48.1									
		5.0	1:55 1:47 1:44 1:21 0:49	(5.0) 100%	(5.0) 100%	RUN-6 609-CS-04	(55.6) 85%	(38.2) 59%		LIMESTONE, boundstone, very pale brown (10YR8/3) to white (10YR8/1), hard, indurated, trace to few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)
-54.6	53.1									48.1ft: white (10YR8/1), trace vugs
		5.0	0:51 1:05 1:02 0:29 0:52	(4.8) 96%	(4.0) 80%	RUN-7				
-59.6	58.1									
		5.0	0:42 1:00 0:56 0:35 0:41	(5.0) 100%	(4.7) 94%	RUN-8				
-64.6	63.1									
-65.6	64.1	1.0	0:38	(1.0)	(0.8)	RUN-9				
-66.1	64.6	0.5	1:49/0.5	100%	80%	RUN-10				
-69.6	68.1	3.5	0:25/0.5 0:48 0:26 0:18	(0.0) 0%	(0.0) 0%	RUN-11				
		4.0	0:33 1:40 0:55 0:45	(1.6) 46%	(0.0) 0%	RUN-12				
-73.6	72.1									
-74.6	73.1	1.0	0:38	(1.0)	(0.0)	RUN-13				
		3.4	0:20 0:23 0:35 0:29	100%	0%	RUN-14				
-78.0	76.5									
-79.6	78.1	1.6	0:52/0.4	(1.6)	(0.9)	RUN-15				76.5ft: white (2.5Y8/1)
		5.0	0:50/0.6 1:12 2:01 1:34 0:48 0:45 0:40	100%	56%	RUN-16 609-CS-06				
-84.6	83.1									
		5.0	1:04 1:02 1:12 2:07 2:09	(4.5) 90%	(2.9) 58%	RUN-17				
-89.6	88.1									
		5.0	2:01 0:36 0:30 1:28 0:40	(5.0) 100%	(3.3) 66%	RUN-18				88.1ft: white (10YR8/1), few vugs
-94.6	93.1									
		3.0	0:42 1:07 2:08	(1.9) 63%	(0.4) 13%	RUN-19				
-97.6	96.1									
-99.6	98.1	2.0	0:45 1:15	(1.6) 80%	(0.6) 30%	RUN-20				
-101.6	100.1	2.0	1:05 1:18	(2.0) (0.9)		RUN-21				98.1ft: white (7.5YR8/1)

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 5:30:08



SHEET 2 OF 2

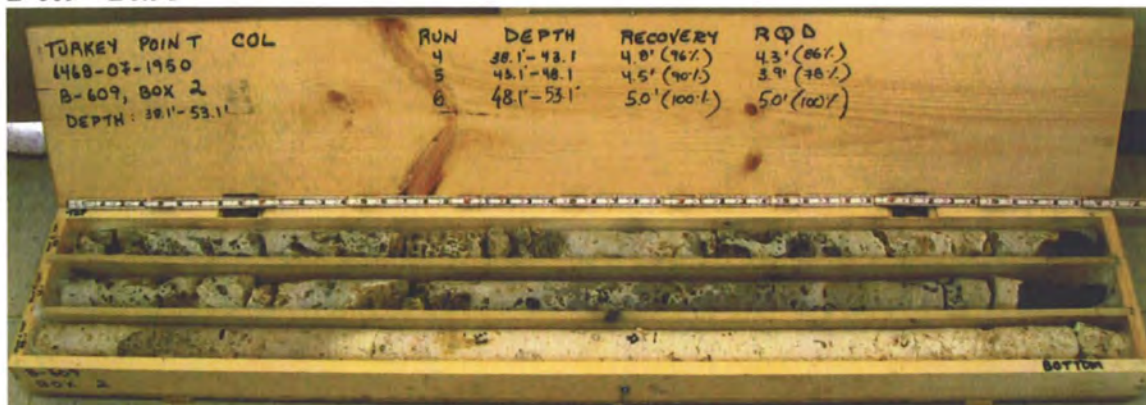
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: H. Lyatuu
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-609	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 396,763 US ft (NAD83/90)	EASTING: 876,689 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.7 ft	CASING DEPTH: 4" to 25.0', 3" to 125.0'	HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 3/10/08	COMPLETED: 3/12/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-104.6	103.1	3.0	0.57 0.58 1.04	100% (3.0)	45% (2.8)	RUN-22/ RUN-22 609-CS-07				100.1ft: white (2.5YR8/1), few vugs, little shell molds and casts LIMESTONE, boundstone, very pale brown (10YR8/3) to white (10YR8/1), hard, indurated, trace to few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-109.6	108.1	5.0	0.48 0.44 0.56 0.56 1.05	(4.7) 100% 94%	(4.7) 93% 94%	RUN-23				
-113.6	112.1	4.0	0.40 0.49 1.12 0.13	(2.9) 73%	(2.2) 55%	RUN-24				108.1ft: white (10YR8/1)
-114.6	113.1	1.0	0.40	(0.6)	(0.0)	RUN-25				-114.5
-119.6	118.1	5.0	0.48 0.53 0.44 0.22 0.15	60% (0.0) 0%	0% (0.0) 0%	RUN-26	(0.0) 0%	(NA)		Silty SAND (SM), light gray (7.5YR7/1), medium dense, wet, fine grained sand, strong HCl reaction (Tamiami Formation)
										-119.6
										Coring Terminated at Elevation -119.6

TURKEY POINT COL CORE TURKEY POINT GP TURKEY POINT COL GDT 5:30:08



B-609 - Box 1



B-609 - Box 2



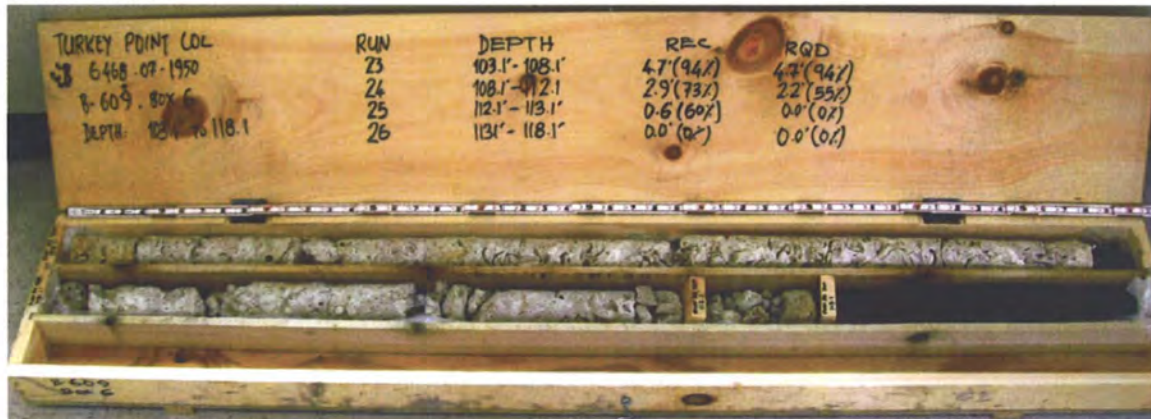
B-609 - Box 3



B-609 - Box 4



B-609 - Box 5



B-609 - Box 6



SHEET 2 OF 4

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)	
BORING NO.: B-610(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 397,084 US ft (NAD83/90)				EASTING: 876,644 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 269.0 ft		BORING DIAMETER: 4" to 106.0', 3" to 269.0'				CASING DEPTH: 4" to 106.0'				HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 3/24/08		COMPLETED: 4/2/08		CORE SIZE: HQ3				BITS USED: 2 15/16" & 3 7/8" Tricones					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-76.2					Continued from previous page								
-77.4	76.0												LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-82.4	81.0												81.0ft: few vugs, shell molds and casts 84.0 to 86.5ft: no recovery, soft layer-possible sand lense
-87.4	86.0												86.5ft: medium hard to hard, moderately indurated to indurated
-92.4	91.0												91.0ft: hard, indurated, little bivalve and gastropod shell molds and casts
-97.4	96.0												96.0ft: mostly bivalve and gastropod shell molds and casts
-102.4	101.0												
-107.4	106.0												
-112.4	111.0												
-117.4	116.0												
		6	5	4									116.0ft: Switch sampling method to SPT
-123.9	122.5	3	4	5									122.5ft: trace shell fragments
-133.9	132.5	4	4	4									
-143.9	142.5	6	4	7									142.5ft: medium dense

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 7:10:08



SHEET 3 OF 4

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark				
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)		
BORING NO.: B-610(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA		
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 397,084 US ft (NAD83/90)				EASTING: 876,644 US ft (NAD83/90)				24 HR. NA		
TOTAL DEPTH: 269.0 ft		BORING DIAMETER: 4" to 106.0', 3" to 269.0'				CASING DEPTH: 4" to 106.0'				HAMMER (ID): 140 lb. Auto (07)				
DATE STARTED: 3/24/08		COMPLETED: 4/2/08		CORE SIZE: HQ3				BITS USED: 2 15/16" & 3 7/8" Tricones						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	▼ MOI	L O G	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				
-151.0					Continued from previous page									
-153.9	152.5	5	6	8										Silty SAND (SM), olive gray (5Y5/2), loose, wet, friable calcareous cemented sandstone fragments, strong HCl reaction, fine to medium grained sand, fine to coarse gravel (continued)
-163.9	162.5	4	3	8										
-173.9	172.5	3	3	9										172.5ft: light olive gray (5Y6/2)
-183.9	182.5	3	5	9										
-193.9	192.5	3	2	7										192.5ft: olive gray (5Y5/2), loose
-203.9	202.5	4	5	7										202.5ft: medium dense
-213.9	212.5	6	4	6										212.5ft: loose
-224.1	222.7	6	7	13										-217.4 ————— 216.0 Silty SAND (SM), light olive brown (5Y6/2), medium dense, wet, fine grained sand, strong HCl reaction (Hawthorn Group)

TURKEY POINT COL BORE: TURKEY POINT GPJ TURKEY POINT COL GDT 7.10.08



SHEET 4 OF 4

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: R. Clark						
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-750 (Miller)		DRILLER: G.Bilbrey/P.McKorkle/J.Tucker		GROUND WATER (ft)						
BORING NO.: B-610(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA						
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 397,084 US ft (NAD83/90)		EASTING: 876,644 US ft (NAD83/90)		24 HR. NA						
TOTAL DEPTH: 269.0 ft		BORING DIAMETER: 4" to 106.0', 3" to 269.0'		CASING DEPTH: 4" to 106.0'		HAMMER (ID): 140 lb. Auto (07)						
DATE STARTED: 3/24/08		COMPLETED: 4/2/08		CORE SIZE: HQ3		BITS USED: 2 15/16" & 3 7/8" Tricones						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100		
-225.8					Continued from previous page							
-233.9	232.5	7	9	12						610(DH)-20		Silty SAND (SM), light olive brown (5Y6/2), medium dense, wet, fine grained sand, strong HCl reaction (Hawthorn Group) (continued)
-243.9	242.5	16	17	21						610(DH)-21		242.5ft: dense
-253.9	252.5	6	9	20						610(DH)-22		252.5ft: gray (5Y5/1), medium dense
-268.9	267.5	10	19	32						610(DH)-23		267.5ft: olive gray (5Y5/2), very dense
												Boring Terminated at Elevation -270.4 ft

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL GDT 7/10/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)	
BORING NO.: B-610(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 397,084 US ft (NAD83/90)				EASTING: 876,644 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 269.0 ft				CASING DEPTH: 4" to 106.0'						HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 3/24/08		COMPLETED: 4/2/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
												Begin Coring @ 16.5 ft	
-17.9	16.5	4.5	1:38 0:33 0:17 0:20	(1.5) 33%	(1.0) 22%	RUN-1	(3.2) 38%	(1.4) 16%				LIMESTONE, boundstone, pale yellow (2.5Y7/3), very soft, wet, friable, some sand, strong HCl reaction, oolitic (Miami Formation) (continued)	
-22.4	21.0	5.0	0:13/0.5 0:41 0:11 0:07 0:09 1:27	(1.7) 34%	(0.4) 8%	RUN-2						16.5ft: white (5Y8/1), soft to hard, friable to indurated, strong HCl reaction, fossiliferous, locally interconnected vugs 21.0ft: hard, indurated, few to little vugs, porous	
-27.4	26.0	5.0	0:59 1:05 1:11 2:01 2:21	(4.8) 96%	(4.8) 96%	RUN-3 610(DH)- CS-01 610(DH)- CS-02	(21.1) 91%	(17.8) 76%				-26.4	LIMESTONE, boundstone, white (5Y8/1), hard, indurated, strong HCl reaction, fossiliferous, recrystallized calcite, little vugs (Upper Fort Thompson Formation)
-32.4	31.0	5.0	1:25 1:27 0:52 2:26 2:11	(4.0) 80%	(1.6) 32%	RUN-4							28.5ft: loss of circulation
-37.4	36.0	5.0	1:35 1:31 1:52 2:51 2:15	(5.0) 100%	(4.3) 86%	RUN-5							36.0ft: coralline
-42.4	41.0	5.0	2:11 2:59 2:45 2:39 2:41	(5.0) 100%	(5.0) 100%	RUN-6							41.0ft: white (5Y8/1) to light bluish gray (5PB7/1) at 45.5ft
-47.4	46.0	5.0	3:32 3:35 3:30 2:45 2:57	(5.0) 100%	(4.8) 96%	RUN-7							46.0ft: light bluish gray (5PB7/1) to 48.3ft; horizontal bedding plane at 48.3ft
-52.4	51.0	5.0	1:40 1:11 0:28 1:10 1:16	(3.8) 76%	(3.1) 62%	RUN-8 610(DH)- CS-04	(52.0) 80%	(36.1) 55%				-49.7	LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, trace vugs, strong HCl reaction (Lower Fort Thompson Formation)
-57.4	56.0	5.0	0:43 0:49 1:05 1:11 1:28	(3.6) 72%	(2.2) 44%	RUN-9							51.0ft: medium hard, moderately indurated 53.0 to 54.0ft: soft, friable
-62.4	61.0	5.0	0:35 0:31 1:21 1:35 0:56	(4.5) 90%	(3.9) 78%	RUN-10							56.0ft: medium hard to hard, moderately indurated to indurated
-67.4	66.0	5.0	1:48 1:28 2:05 2:04 2:01	(4.4) 88%	(3.0) 60%	RUN-11							61.0 to 62.4ft: soft, friable 62.4ft: hard, indurated, some sand
-72.4	71.0	5.0	1:11 1:05 1:20 1:35 1:46	(3.7) 74%	(2.5) 50%	RUN-12							66.0ft: medium hard, moderately indurated to indurated
-77.4	76.0	5.0	0:09 0:47 1:14 1:14 1:59	(3.8) 76%	(3.0) 60%	RUN-13 610(DH)- CS-05							71.0ft: hard, indurated
-82.4	81.0	5.0	1:11 1:13 0:45 0:09 0:02	(2.7) 54%	(1.3) 26%	RUN-14							81.0ft: few vugs, shell molds and casts 84.0 to 86.5ft: no recovery, soft layer-possible sand lense
-87.4	86.0	5.0	0:30 1:01 1:20 2:05 2:01	(3.0) 60%	(1.1) 22%	RUN-15							86.5ft: medium hard to hard, moderately indurated to indurated
-92.4	91.0												

TURKEY POINT COL CORE TURKEY POINT COL GDT 7/10/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-610(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,084 US ft (NAD83/90)	EASTING: 876,644 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 269.0 ft	CASING DEPTH: 4" to 106.0'	HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 3/24/08	COMPLETED: 4/2/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	RQD (ft) %	SAMP. NO.	REC. (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS
										Continued from previous page
-97.4	96.0	5.0	0:31 1:04 1:10 1:20 1:12	(4.0) 80%	(2.6) 52%	RUN-16				91.0ft: hard, indurated, little bivalve and gastropod shell molds and casts LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-102.4	101.0	5.0	1:01 0:54 0:59 1:04 1:38	(4.2) 84%	(2.7) 54%	RUN-17				96.0ft: mostly bivalve and gastropod shell molds and casts
-107.4	106.0	5.0	1:24 0:58 1:21 1:22 1:25	(5.0) 100%	(4.0) 80%	RUN-18				106.0ft: trace sand
-112.4	111.0	5.0	1:23 1:14 1:01 1:28 1:22	(4.5) 90%	(3.3) 66%	RUN-19				
-117.4	116.0	5.0	0:42 0:14 1:04 0:48 0:33	(2.1) 42%	(0.7) 14%	RUN-20	(0.0) 0%	(NA)		POORLY SORTED SAND with silt (SP-SM), pale yellow (5Y8/2), loose, wet, fine to coarse grained sand, fine gravel, strong HCl reaction, trace limestone gravel-sized fragments (Tamiami Formation) Coring Terminated at Elevation -117.4

TURKEY POINT COL CORE: TURKEY POINT.GPJ TURKEY POINT COL.GDT 7/10/08



B-610 (DH) – Box 1



B-610 (DH) – Box 2



B-610 (DH) – Box 3



B-610 (DH) – Box 4



B-610 (DH) – Box 5



B-610 (DH) – Box 6

GEOTECHNICAL BORING LOG

Prepared By SP74 Date 5-30-08

Checked By *TPH* Date *6-20-68*

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade				GEOLOGIST: H. Lyatuu/G. Pillappa			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (CLT)				DRILLER: Warren/Banks/Sloan/Rosser				GROUND WATER (ft)			
BORING NO.: B-611				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA			
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 397,087 US ft (NAD83/90)				EASTING: 876,735 US ft (NAD83/90)				24 HR. NA			
TOTAL DEPTH: 151.5 ft				BORING DIAMETER: 4" to 25.0', 3" to 151.5'				CASING DEPTH: 4" to 25.0', 3" to 120.1'				HAMMER (ID): 140 lb. Auto (MEC-04)			
DATE STARTED: 2/26/08				COMPLETED: 3/24/08				CORE SIZE: HQ3				BITS USED: 2 15/16" & 2 7/8" Tricones			
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-1.5					Ground Surface										
-1.5	0.0	WOH	WOH	WOH	0						611-1		MUCK, very pale brown (10YR7/3), mottled dark gray (10YR4/1), very soft, moist, weak HCl reaction		
-4.0	2.5										611-2				
-6.5	5.0	4	15	22			37				611-3		LIMESTONE, boundstone, white (10YR8/1), medium hard, wet, strong HCl reaction, oolitic (Miami Formation)		
-9.0	7.5	9	8	9			17				611-4		5.0ft: very soft 7.5ft: white (2.5Y8/1)		
-11.5	10.0	6	5	6			11				611-5		10.0ft: white (10YR8/1), soft		
-14.0	12.5	4	8	21			29				611-6		12.5ft: moderately hard, trace shells		
-16.5	15.0	4	21	25			46				611-7				
-21.5	20.0	3	6	34			40				611-8		20.0ft: white (7.5YR8/1), very soft		
-26.5	25.0	5	6	9			15				611-9		LIMESTONE, boundstone, white (7.5YR8/1), hard, wet, strong HCl reaction, trace shells (Upper Fort Thompson Formation)		
-27.4	25.9	16	50/0.4							66/0.9	RUN-1		25.9ft: Switch sampling method to coring		
-32.4	30.9										611-CS-01		25.9ft: white (10YR8/1), hard, indurated, fossiliferous, coralline, strong HCl reaction, little vugs		
-37.4	35.9										RUN-2				
-41.1	39.6										RUN-3		35.9ft: few vugs		
-43.0	41.5										611-CS-02				
-46.6	45.1										RUN-4		40.9 to 41.5ft. Drilled out/washed out due to rig change and tool change		
-51.6	50.1										RUN-5				
-56.6	55.1										611-CS-03		45.1ft: gray (5Y6/1) to 47.9ft		
-61.6	60.1										RUN-6				
-66.6	65.1										RUN-7		LIMESTONE, boundstone, white (10YR8/1), to white (5YR8/1), hard, indurated, strong HCl reaction, trace shells, few vugs (Lower Fort Thompson Formation)		
-71.6	70.1										RUN-8		50.1ft: white (5YR8/1)		
											RUN-9				
											RUN-10				
											611-CS-05		70.1ft: trace fine sand		
											RUN-11				



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: H. Lyatuu/G. Pillappa							
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550 (CLT)		DRILLER: Warren/Banks/Sloan/Rosser		GROUND WATER (ft)							
BORING NO.: B-611		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA							
GROUND ELEV.: -1.5 ft (NAVD88)		NORTHING: 397,087 US ft (NAD83/90)		EASTING: 876,735 US ft (NAD83/90)		24 HR. NA							
TOTAL DEPTH: 151.5 ft		BORING DIAMETER: 4" to 25.0', 3" to 151.5'		CASING DEPTH: 4" to 25.0', 3" to 120.1'		HAMMER (ID): 140 lb. Auto (MEC-04)							
DATE STARTED: 2/26/08		COMPLETED: 3/24/08		CORE SIZE: HQ3		BITS USED: 2 15/16" & 2 7/8" Tricones							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO	LOG MOI	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-76.3					Continued from previous page								
-76.6	75.1										RUN-12		LIMESTONE, boundstone, white (10YR8/1), to white (5YR8/1), hard, indurated, strong HCl reaction, trace shells, few vugs (Lower Fort Thompson Formation) (continued)
-81.6	80.1										RUN-13		
-86.6	85.1										RUN-14		
-91.6	90.1										RUN-15		
-96.6	95.1										611-CS-06		
-101.6	100.1										RUN-16		
-106.6	105.1										RUN-17		-100.2 Silty SAND (SM), white (5Y8/1), wet, some shell fragments, strong HCl reaction, grades to limestone 98.7
-111.6	110.1										RUN-18		-106.2 LIMESTONE, boundstone, white (5Y8/1), hard, indurated, sandy, fossiliferous, strong HCl reaction, few vugs, little shell molds and casts 104.7
-116.6	115.1										611-CS-07		
-121.6	120.1										RUN-19		
-126.6	125.1										RUN-20		-114.5 Silty SAND with gravel (SM), light brownish gray (10YR6/2), medium dense, wet, fine to coarse grained sand, fine to coarse gravel, weak HCl reaction (Tamiami Formation) 113.0
-132.5	131.0	6	8	10							611-10		120.1ft: Switch sampling method to SPT
-141.5	140.0	5	9	9							611-11		
		4	4	4							611-12		140.0ft: olive gray (5Y5/2), loose

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08

BECHTEL PROJECT NO.: 25409						MACTEC PROJECT NO.: 6468-07-1950						COUNTY: Miami-Dade				GEOLOGIST: H. Lyatuu/G. Pillappa					
SITE DESCRIPTION: Turkey Point COL						DRILL MACHINE: CME-550 (CLT)						DRILLER: Warren/Banks/Sloan/Rosser						GROUND WATER (ft)			
BORING NO.: B-611						DRILL METHOD: Mud Rotary/ Core						SAMPLE METHODS: SPT/Core						0 HR. NA			
GROUND ELEV.: -1.5 ft (NAVD88)						NORTHING: 397,087 US ft (NAD83/90)						EASTING: 876,735 US ft (NAD83/90)						24 HR. NA			
TOTAL DEPTH: 151.5 ft						BORING DIAMETER: 4" to 25.0', 3" to 151.5'						CASING DEPTH: 4" to 25.0', 3" to 120.1'						HAMMER (ID):140 lb. Auto (MEC-04)			
DATE STARTED: 2/26/08						COMPLETED: 3/24/08						CORE SIZE: HQ3						BITS USED: 2 15/16" & 2 7/8" Tricones			
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT						SAMP.	▼ MOI	L O G	SOIL AND ROCK DESCRIPTION							
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO.										
-151.1					Continued from previous page																
-151.5	150.0	9	9	13	● 22						611-13			-153.0	150.0ft: medium dense		151.5				
Boring Terminated at Elevation -153.0 ft																					

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5:30'08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: H. Lyatuu/G. Pillappa		
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (CLT)				DRILLER: Warren/Banks/Sloan/Rosser			GROUND WATER (ft)	
BORING NO.: B-611				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core			0 HR. NA	
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 397,087 US ft (NAD83/90)				EASTING: 876,735 US ft (NAD83/90)		24 HR. NA		
TOTAL DEPTH: 151.5 ft				CASING DEPTH: 4" to 25.0', 3" to 120.1'						HAMMER (ID): 140 lb. Auto (MEC-04)		
DATE STARTED: 2/26/08		COMPLETED: 3/24/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)						
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %RQD (ft) %		SAMP. NO.	STRATA REC. (ft) %RQD (ft) %		L O G	DESCRIPTION AND REMARKS		
										Begin Coring @ 25.9 ft		
-27.4	25.9	5.0	1.37 2.11 1.48 2.10 4.14	(4.7) 94%	(4.0) 80%	RUN-1 611-CS-01	(20.6) 94%	(18.5) 84%		LIMESTONE, boundstone, white (7.5YR8/1), hard, wet, strong HCl reaction, trace shells (Upper Fort Thompson Formation) (continued) 25.9ft: white (10YR8/1), hard, indurated, fossiliferous, coralline, strong HCl reaction, little vugs		
-32.4	30.9	5.0	1.31 1.11 1.10 1.40 1.25	(5.0) 100%	(5.0) 100%	RUN-2						
-37.4	35.9	3.7	1.34 1.11 1.34	(3.7) 100%	(3.7) 100%	RUN-3 611-CS-02				35.9ft: few vugs		
-41.1	39.6	1.3	2.14/0.7	(1.3) 100%	(0.7) 54%	RUN-4						
-42.4	40.9	3.6	5.16/1.3	(3.3) 92%	(3.0) 83%	RUN-5 611-CS-03				40.9 to 41.5ft: Drilled out/washed out due to rig change and tool change		
-43.0	41.5	5.0	0.32 0.49 0.39 0.21/0.6	(4.8) 96%	(4.3) 86%	RUN-6				45.1ft: gray (5Y6/1) to 47.9ft		
-46.6	45.1	5.0	0.49 0.41 0.40 0.30 0.41	(4.9) 98%	(3.0) 60%	RUN-7	(37.5) 74%	(21.1) 42%	-49.4	LIMESTONE, boundstone, white (10YR8/1), to white (5YR8/1), hard, indurated, strong HCl reaction, trace shells, few vugs (Lower Fort Thompson Formation) 50.1ft: white (5YR8/1)		
-51.6	50.1	5.0	0.52 0.46 0.28 0.27 0.18	(4.6) 92%	(4.0) 80%	RUN-8						
-56.6	55.1	5.0	0.26 0.17 0.24 0.23 0.30	(2.1) 42%	(0.6) 12%	RUN-9						
-61.6	60.1	5.0	0.37 0.28 0.26 0.32 0.34	(4.6) 92%	(2.2) 44%	RUN-10 611-CS-05						
-66.6	65.1	5.0	0.33 0.40 0.28 0.36 0.27	(2.6) 52%	(1.4) 28%	RUN-11				70.1ft: trace fine sand		
-71.6	70.1	5.0	0.16 0.27 0.30 0.19 0.41	(1.2) 24%	(0.0) 0%	RUN-12						
-76.6	75.1	5.0	0.18 0.28 0.22 0.28 0.50	(2.0) 40%	(0.5) 10%	RUN-13						
-81.6	80.1	5.0	0.42 0.19 0.33 0.18 0.21	(4.4) 88%	(2.0) 40%	RUN-14						
-86.6	85.1	5.0	0.28 0.30 0.28 0.48 0.37	(4.9) 98%	(3.8) 76%	RUN-15 611-CS-06						
-91.6	90.1	5.0	0.14 0.23 0.23 0.18 0.21	(3.6) 72%	(1.4) 28%	RUN-16						
-96.6	95.1		0.13 0.12 0.15 0.16 0.15				(1.8) 30%	(NA)	-100.2	Silty SAND (SM), white (5Y8/1), wet, some shell fragments, strong HCl reaction, grades to limestone		
-101.6	100.1									98.7		

TURKEY POINT COL CORE, TURKEY POINT GPJ, TURKEY POINT COL, GDT, 5/30/08



SHEET 2 OF 2

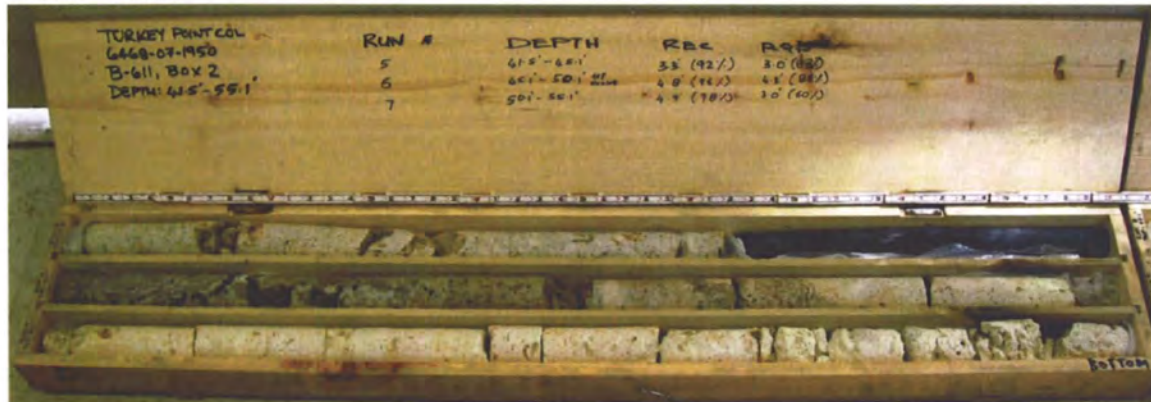
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: H. Lyatuu/G. Pillappa
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (CLT)	DRILLER: Warren/Banks/Sloan/Rosser	GROUND WATER (ft)
BORING NO.: B-611	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 397,087 US ft (NAD83/90)	EASTING: 876,735 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.5 ft	CASING DEPTH: 4" to 25.0', 3" to 120.1'	HAMMER (ID): 140 lb. Auto (MEC-04)	
DATE STARTED: 2/26/08	COMPLETED: 3/24/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	RQD (ft) %	SAMP. NO.	REC (ft) %	RQD (ft) %	LOG	DESCRIPTION AND REMARKS
										Continued from previous page
-106.6	105.1	5.0	0:40 0:32 0:39 0:37 0:40	(2.2) 44%	(0.0) 0%	RUN-17				Silty SAND (SM), white (5Y8/1), wet, some shell fragments, strong HCl reaction, grades to limestone (<i>continued</i>)
-111.6	110.1	5.0	0:24 0:25 0:26 0:21 0:27	(4.8) 96%	(4.3) 86%	RUN-18 611-CS-07	(7.6) 92%	(4.8) 58%		LIMESTONE, boundstone, white (5Y8/1), hard, indurated, sandy, fossiliferous, strong HCl reaction, few vugs, little shell molds and casts
-116.6	115.1	5.0	0:18 0:20 0:23 0:16 0:17	(2.4) 48%	(0.5) 10%	RUN-19	(0.0) 0%	(NA)		Silty SAND with gravel (SM), light brownish gray (10YR6/2), medium dense, wet, fine to coarse grained sand, fine to coarse gravel, weak HCl reaction (Tamiami Formation)
-121.6	120.1	5.0	0:12 0:14 0:10 0:14 0:17	(0.0) 0%	(0.0) 0%	RUN-20				Coring Terminated at Elevation -121.6

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5:30:08



B-611 - Box 1



B-611 - Box 2



B-611 - Box 3



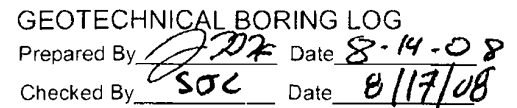
B-611 - Box 4



B-611 - Box 5



B-611 - Box 6



BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: L. Bisson							
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (ATL)			DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft)							
BORING NO.: B-612			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA							
GROUND ELEV.: -1.5 ft (NAVD88)			NORTHING: 397,086 US ft (NAD83/90)			EASTING: 876,869 US ft (NAD83/90)			24 HR. NA							
TOTAL DEPTH: 125.1 ft			BORING DIAMETER: 4" to 16.0', 3" to 125.1'			CASING DEPTH: 4" to 16.0', 3" to 118.6'			HAMMER (ID): 140 lb. Auto (MEC-03)							
DATE STARTED: 3/25/08			COMPLETED: 3/26/08			CORE SIZE: HQ3			BITS USED: 4" & 3" Roller Cones							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100						
-1.5					Ground Surface											
-1.5	0.0	WOR	WOR	WOR	0							612-1			-1.5	0.0
-4.0	2.5											612-2A&B			-4.5	3.0
-6.5	5.0	4	5	8												
-9.0	7.5	7	11	10								612-3				
-11.5	10.0	5	6	7								612-4				
-14.0	12.5	4	4	6								612-5				
-16.5	15.0	4	8	8								612-6				
-17.9	16.4	12	15	50/0.4								612-7				
-19.6	18.1											RUN-1				
												RUN-2				
-24.6	23.1											RUN-3			-25.5	24.0
-29.6	28.1											RUN-4				
-34.6	33.1											RUN-5				
-39.6	38.1											RUN-6				
-44.6	43.1											RUN-7				
-49.6	48.1											RUN-8			-49.0	47.5
-54.6	53.1											RUN-9				
-59.6	58.1											RUN-10				
-64.6	63.1											RUN-11				
-69.6	68.1											RUN-12				
-74.6	73.1															

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade				GEOLOGIST: L. Bisson			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)			
BORING NO.: B-612				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA			
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 397,086 US ft (NAD83/90)				EASTING: 876,869 US ft (NAD83/90)				24 HR. NA			
TOTAL DEPTH: 125.1 ft				BORING DIAMETER: 4" to 16.0', 3" to 125.1'				CASING DEPTH: 4" to 16.0', 3" to 118.6'				HAMMER (ID): 140 lb. Auto (MEC-03)			
DATE STARTED: 3/25/08				COMPLETED: 3/26/08				CORE SIZE: HQ3				BITS USED: 4" & 3" Roller Cones			
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-76.3					Continued from previous page										
-79.6	78.1										RUN-14		LIMESTONE, boundstone, white (10YR8/1), to light gray (10YR7/1), hard, indurated, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)		
-83.6	82.1										RUN-15		82.1ft: moderately hard, some vugs 83.1ft: hard, few vugs		
-84.6	83.1										RUN-16				
-89.6	88.1										RUN-17		88.1ft: moderately hard		
-94.6	93.1										RUN-18		93.1ft: hard, interbedded sand lenses		
-99.6	98.1										RUN-19		98.1ft: few shell molds and casts		
-104.6	103.1										RUN-20				
-109.6	108.1										RUN-21		108.1ft: white (10YR8/1), to light gray (10YR7/2), to greenish gray (10Y5/1), hard to moderately hard		
-114.6	113.1										RUN-22		113.1ft: greenish gray (10Y5/1), hard		
-120.1	118.6	3	3	2	5						612-R		-116.5 115.0 Silty SAND (SM), gray (2.5Y6/1), loose, wet, fine grained sand, strong HCl reaction (Tamiami Formation) 118.6ft: Switch sampling method to SPT		
-125.1	123.6	6	25	12	37						612-9A&B		-126.2 124.7 126.1 123.6ft: light gray (10YR7/1), hard, medium to coarse grained sand, some shell fragments SILT (ML), light olive gray (5Y6/2), very stiff, wet, strong HCl reaction Boring Terminated at Elevation -126.6 ft		

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/14/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: L. Bisson
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-612	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 397,086 US ft (NAD83/90)	EASTING: 876,869 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 125.1 ft	CASING DEPTH: 4" to 16.0', 3" to 118.6'	HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 3/25/08	COMPLETED: 3/26/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (%)	RQD (%)	SAMP. NO.	REC. (%)	RQD (%)	LOG	DESCRIPTION AND REMARKS
										Begin Coring @ 16.4 ft
-17.9	16.4	1.7	1:42	(1.7)	(1.0)	RUN-1	(2.5)	(1.0)		LIMESTONE, boundstone, pale yellow (2.5Y8/3), very soft, wet, sandy, strong HCl reaction, oolitic (Miami Formation) <i>(continued)</i>
-19.6	18.1	5.0	1:06/0.7	100%	59%	RUN-2	33%	13%		16.4ft: white (10YR8/1), mottled light brownish gray (10YR6/1), hard, indurated, strong HCl reaction, oolitic, vertical solution cavities
			0:48	(0.5)	(0.0)					18.1ft: fossiliferous, few vugs
			0:27	10%	0%					
			0:35							
-24.6	23.1	5.0	0:40							
			0:44							
			0:46	(4.4)	(2.8)	RUN-3	(20.0)	(14.8)		LIMESTONE, boundstone, white (10YR8/1), to light gray (10YR7/1), hard, indurated, fossiliferous, trace sand, trace recrystallized calcite, strong HCl reaction, few vugs (Upper Fort Thompson Formation)
			1:53	88%	56%		85%	63%		
			0:45							
			0:28							
-29.6	28.1	5.0	0:31							
			0:09	(1.5)	(0.0)	RUN-4				27.0ft: loss of circulation
			0:03	30%	0%					28.1ft: white (10YR8/1), to gray (10YR5/1), to olive yellow (10YR6/8)
			0:22							
			0:05							
-34.6	33.1	5.0	0:51							33.1ft: white (10YR8/1), moderately hard to hard
			1:46	(5.0)	(3.5)	RUN-5				
			0:55	100%	70%					
			0:58							
-39.6	38.1	5.0	0:58							
			1:20							
			1:47	(5.0)	(4.5)	RUN-6				
			1:22	100%	90%					
			1:27							
-44.6	43.1	5.0	1:04							
			1:10							
			1:23	(5.0)	(4.6)	RUN-7				43.1ft: white (10YR8/1), to gray (10YR5/1) at 45.5ft to 47.5ft, hard, little vugs
			1:24	100%	92%					
			0:57							
			1:31							
-49.6	48.1	5.0	1:21				(55.4)	(35.8)		LIMESTONE, boundstone, white (10YR8/1), to light gray (10YR7/1), hard, indurated, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)
			1:04	(5.0)	(4.9)	RUN-8	82%	53%		52.1 to 53.1ft: soft
			1:38	100%	98%					
			1:15							
-54.6	53.1	5.0	0:49							
			0:35							
			0:24	(5.0)	(4.0)	RUN-9				53.1ft: white (10YR8/1), soft to hard, moderately indurated to indurated, sandy
			0:37	100%	80%					
			0:33							
-59.6	58.1	5.0	0:54							
			0:46							
			1:08	(4.7)	(4.1)	RUN-10				58.1ft: white (10YR8/1), to light gray (10YR7/1), hard, indurated
			1:48	94%	82%					
			1:52							
-64.6	63.1	5.0	0:45							
			1:46							
			1:02	(3.5)	(1.9)	RUN-11				
			0:37	70%	38%					
			0:52							
-69.6	68.1	5.0	0:52							
			0:26							
			0:33	(3.2)	(0.6)	RUN-12				
			0:27	64%	12%					
			1:01							
-74.6	73.1	5.0	1:38							
			0:20							
			0:55	(2.4)	(0.9)	RUN-13				
			0:37	48%	18%					
			0:08							
-79.6	78.1	5.0	0:19							
			1:10							
			1:01	(4.0)	(3.3)	RUN-14				
			1:02	100%	83%					
-83.6	82.1	4.0	1:06							
			1:15							
-84.6	83.1	1.0	0:29	(0.8)	(0.4)	RUN-15				82.1ft: moderately hard, some vugs
			0:35	80%	40%					
			0:09	(4.1)	(1.0)	RUN-16				83.1ft: hard, few vugs
			0:48	82%	20%					
			0:32							
-89.6	88.1	5.0	0:49							
			1:04	(3.2)	(0.4)	RUN-17				88.1ft: moderately hard
			0:46	64%	8%					
			0:30							

TURKEY POINT COL CORE TURKEY POINT COL GDT 3/14/08

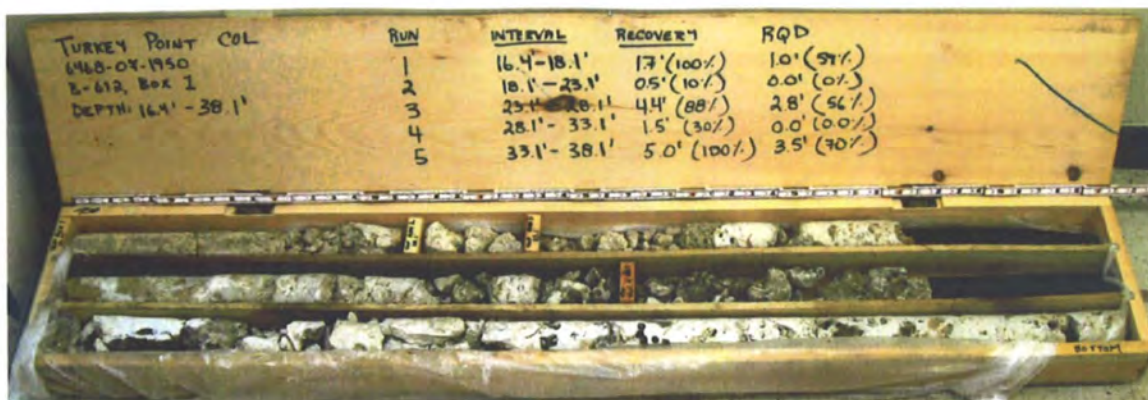


SHEET 2 OF 2

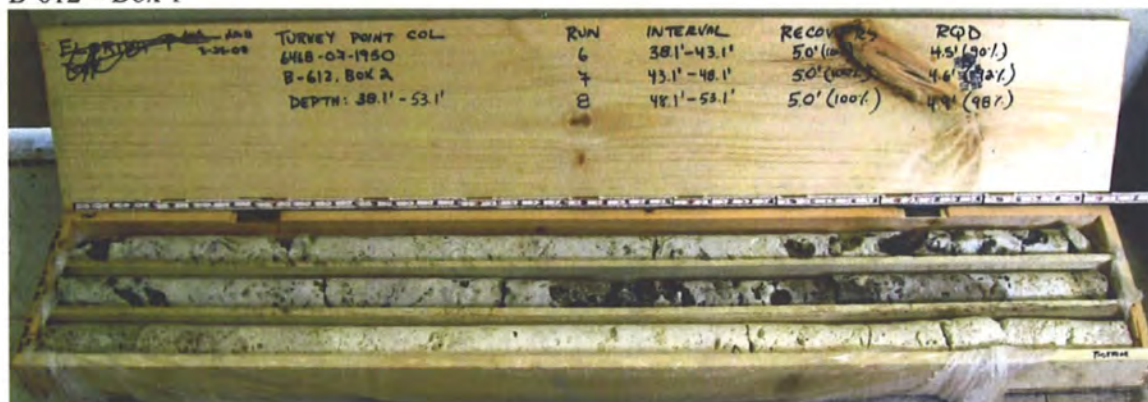
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: L. Bisson
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-612	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 397,086 US ft (NAD83/90)	EASTING: 876,869 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 125.1 ft	CASING DEPTH: 4" to 16.0', 3" to 118.6'	HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 3/25/08	COMPLETED: 3/26/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	RQD (ft) %	SAMP. NO.	REC. (ft) %	RQD (ft) %	LOG	DESCRIPTION AND REMARKS
										Continued from previous page
-94.6	93.1	5.0	0.30 0.26	(2.6) 52%	(0.9) 18%	RUN-18				LIMESTONE, boundstone, white (10YR8/1), to light gray (10YR7/1), hard, indurated, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued) 93.1ft: hard, interbedded sand lenses
-99.6	98.1	5.0	0.42 0.44 0.40	(5.0) 100%	(4.2) 84%	RUN-19				98.1ft: few shell molds and casts
-104.6	103.1	5.0	0.36 0.50 0.32 0.27 1.03	(5.0) 100%	(5.0) 100%	RUN-20				
-109.6	108.1	5.0	0.43 0.53 0.48 1.03 0.45	(5.0) 100%	(3.6) 72%	RUN-21				108.1ft: white (10YR8/1), to light gray (10YR7/2), to greenish gray (10Y5/1), hard to moderately hard 113.1ft: greenish gray (10Y5/1), hard
-114.6	113.1	5.0	0.31 0.19 0.35 0.24 0.39	(1.3) 26%	(0.0) 0%	RUN-22	(0.0) 0%	(NA)		
-119.6	118.1		0.37 0.22 0.24 0.41 0.18							Silty SAND (SM), gray (2.5Y6/1), loose, wet, fine grained sand, strong HCl reaction (Tamiami Formation) Coring Terminated at Elevation -119.6

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 8/14/08



B-612 - Box 1



B-612 - Box 2



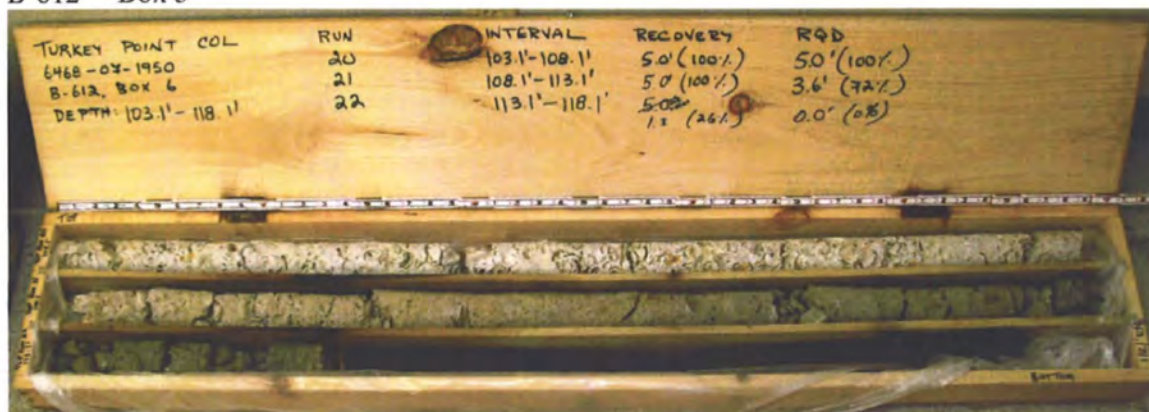
B-612 - Box 3



B-612 - Box 4



B-612 - Box 5



B-612 - Box 6



GEOTECHNICAL BORING LOG

Prepared By SM Date 8-19-08Checked By SC Date 8/19/08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: J. Liles				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550 (Miller)					DRILLER: R. White/ J. Dugger/ C. White					GROUND WATER (ft)		
BORING NO.: B-613					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA		
GROUND ELEV.: -1.4 ft (NAVD88)					NORTHING: 397,162 US ft (NAD83/90)					EASTING: 876,809 US ft (NAD83/90)					24 HR. NA		
TOTAL DEPTH: 150.2 ft			BORING DIAMETER: 3" to 150.2'					CASING DEPTH: 3" to 115.0'					HAMMER (ID):140 lb. Auto (M06)				
DATE STARTED: 3/25/08			COMPLETED: 3/26/08			CORE SIZE: HQ3			BITS USED: 2 7/8" Roller Cone								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION				
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100							
-1.4					Ground Surface								-1.4		0.0		
-1.4	0.0	WOH	WOH	WOH	0						613-1						
-4.2	2.8										613-2A&B						
-6.5	5.1	2	3	4							613-3						
-8.9	7.5	8	10	7							613-4						
-11.1	9.7	15	42	11							613-5						
-13.1	11.7	3	5	10							613-6						
-16.4	15.0	2	11	21							613-7						
-21.4	20.0	5	10	13							613-8						
-27.7	26.3	3	3	8							613-9						
-32.9	31.5										613-10						
-33.3	31.9	50/0.4									RUN-1						
-36.3	34.9										RUN-2						
-41.3	39.9										RUN-3						
-46.3	44.9										RUN-4						
-51.3	49.9										RUN-5						
-56.3	54.9										RUN-6						
-61.3	59.9										RUN-7						
-66.3	64.9										RUN-8						
-71.3	69.9										RUN-9						
-76.3	74.9																

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDI S18 08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: J. Liles				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (Miller)			DRILLER: R. White/ J. Dugger/ C. White			GROUND WATER (ft)				
BORING NO.: B-613			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: -1.4 ft (NAVD88)			NORTHING: 397,162 US ft (NAD83/90)			EASTING: 876,809 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 150.2 ft			BORING DIAMETER: 3" to 150.2'			CASING DEPTH: 3" to 115.0'			HAMMER (ID): 140 lb. Auto (M06)				
DATE STARTED: 3/25/08			COMPLETED: 3/26/08			CORE SIZE: HQ3			BITS USED: 2 7/8" Roller Cone				
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-76.2					Continued from previous page								
-81.3	79.9												LIMESTONE, boundstone, white (2.5Y8/1), moderately hard to hard, moderately indurated to indurated, trace vugs, strong HCl reaction, fossiliferous, few gastropod shell molds and casts (Lower Fort Thompson Formation) (continued)
-86.3	84.9												74.9ft: medium hard to moderately hard, friable to moderately indurated
-91.3	89.9												84.9ft: trace fine to medium grained sand, few vugs
-96.3	94.9												89.9ft: moderately hard, moderately indurated
-101.3	99.9												99.9ft: some vugs, little shell molds and casts
-106.3	104.9												
-111.3	109.9												
-116.3	114.9												
-118.3	116.9	9	10	1									POORLY GRADED SAND (SP), light gray (2.5Y7/1), wet, fine grained sand, strong HCl reaction, trace limestone fragments and shells (Tamiami Formation)
-127.5	126.1	4	7	11									116.9ft: Switch sampling method to SPT
-137.6	136.2	3	2	2									116.9ft: medium dense, shell fragments
-140.1	138.7	2	3	5									126.1ft: greenish gray (10Y6/1)
-150.1	148.7	4	6	7									136.2ft: no recovery, very loose
													138.7ft: loose

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/18/08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: J. Liles					
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (Miller)			DRILLER: R. White/ J. Dugger/ C. White			GROUND WATER (ft)					
BORING NO.: B-613			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA					
GROUND ELEV.: -1.4 ft (NAVD88)			NORTHING: 397,162 US ft (NAD83/90)			EASTING: 876,809 US ft (NAD83/90)			24 HR. NA					
TOTAL DEPTH: 150.2 ft			BORING DIAMETER: 3" to 150.2'			CASING DEPTH: 3" to 115.0'			HAMMER (ID): 140 lb. Auto (M06)					
DATE STARTED: 3/25/08			COMPLETED: 3/26/08			CORE SIZE: HQ3			BITS USED: 2 7/8" Roller Cone					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				
-151.0					Continued from previous page									
														148.7ft: medium dense Boring Terminated at Elevation -151.6 ft

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL.GDT 8/18/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: J. Liles
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger/ C. White	GROUND WATER (ft)
BORING NO.: B-613	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,162 US ft (NAD83/90)	EASTING: 876,809 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.2 ft	CASING DEPTH: 3" to 115.0'	HAMMER (ID): 140 lb. Auto (M06)	
DATE STARTED: 3/25/08	COMPLETED: 3/26/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Begin Coring @ 31.9 ft
-33.3	31.9	3.0	1:01 1:02 1:10	(3.0) 100%	(1.0) 33%	RUN-1	(14.1) 93%	(8.4) 55%		LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, trace clayey sand, strong HCl reaction (Upper Fort Thompson Formation) (continued)
-36.3	34.9	5.0	1:05 0:54 1:08 1:09 0:18	(4.1) 82%	(2.3) 46%	RUN-2				31.9ft: white (2.5Y8/1), moderately hard, moderately indurated, coralline, few vugs 34.9ft: fossiliferous, little vugs
-41.3	39.9	5.0	0:44 0:53 0:57 2:02 1:52	(4.8) 96%	(3.6) 72%	RUN-3				39.9ft: few vugs
-46.3	44.9	5.0	1:08 1:49 2:03 2:10 1:00	(4.9) 98%	(3.5) 70%	RUN-4				44.9ft: light gray (2.5Y7/2), moderately hard to hard, moderately indurated to indurated
-51.3	49.9	5.0	0:58 0:38 0:50 0:47 0:42	(5.0) 100%	(3.6) 72%	RUN-5	(33.8) 51%	(12.9) 20%		LIMESTONE, boundstone, white (2.5Y8/1), moderately hard to hard, moderately indurated to indurated, trace vugs, strong HCl reaction, fossiliferous, few gastropod shell molds and casts (Lower Fort Thompson Formation)
-56.3	54.9	5.0	0:25 0:10 0:37 0:38 0:39	(3.1) 62%	(1.6) 32%	RUN-6				
-61.3	59.9	5.0	0:48 1:06 0:26 0:19 0:38	(1.8) 36%	(0.7) 14%	RUN-7				59.9ft: medium hard to moderately hard, friable to moderately indurated, sandy
-66.3	64.9	5.0	0:11 0:06 0:05 0:06 0:11	(0.0) 0%	(0.0) 0%	RUN-8				64.9ft: no recovery, very fast/soft drilling
-71.3	69.9	5.0	0:09 0:08 0:17 0:14 0:14	(1.1) 22%	(0.0) 0%	RUN-9				69.9ft: moderately hard, moderately indurated, very fast/soft drilling
-76.3	74.9	5.0	0:06 1:28 0:37 3:01 2:26	(3.2) 64%	(0.0) 0%	RUN-10				74.9ft: medium hard to moderately hard, friable to moderately indurated
-81.3	79.9	5.0	1:07 1:10 1:21 1:11 0:30	(2.9) 58%	(1.0) 20%	RUN-11				
-86.3	84.9	5.0	0:30 1:08 0:53 1:15 0:56	(2.9) 58%	(1.3) 26%	RUN-12				84.9ft: trace fine to medium grained sand, few vugs
-91.3	89.9	5.0	0:35 0:33 0:54 0:48 0:25	(0.2) 4%	(0.0) 0%	RUN-13				89.9ft: moderately hard, moderately indurated
-96.3	94.9	5.0	0:44 0:23 0:28 0:19 0:48	(1.4) 28%	(0.0) 0%	RUN-14				
-101.3	99.9	5.0	0:52 0:40 0:46 0:46 0:45	(4.6) 92%	(2.6) 52%	RUN-15				99.9ft: some vugs, little shell molds and casts
-106.3	104.9	5.0	0:46 0:37	(3.2) (0.0)	(0.0) (0.0)	RUN-16				

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDI 8/18/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: J. Liles
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger/ C. White	GROUND WATER (ft)
BORING NO.: B-613	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,162 US ft (NAD83/90)	EASTING: 876,809 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.2 ft	CASING DEPTH: 3" to 115.0'	HAMMER (ID): 140 lb. Auto (M06)	
DATE STARTED: 3/25/08	COMPLETED: 3/26/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Continued from previous page
-111.3	109.9		0.36 0.35 0.25	64%	0%					LIMESTONE, boundstone, white (2.5Y8/1), moderately hard to hard, moderately indurated to indurated, trace vugs, strong HCl reaction, fossiliferous, few gastropod shell molds and casts (Lower Fort Thompson Formation) (continued)
		5.0	0.34 0.32 0.26 0.25 0.55	(1.6) 32%	(0.0) 0%	RUN-17				
-116.3	114.9						(0.4) 10%	(NA)		POORLY GRADED SAND (SP), light gray (2.5Y7/1), wet, fine grained sand, strong HCl reaction, trace limestone fragments and shells (Tamiami Formation)
-118.3	116.9	2.0	0.08 0.36	(0.4) 20%	(0.4) 20%	RUN-18				116.9ft: Switch sampling method to SPT Coring Terminated at Elevation -118.3

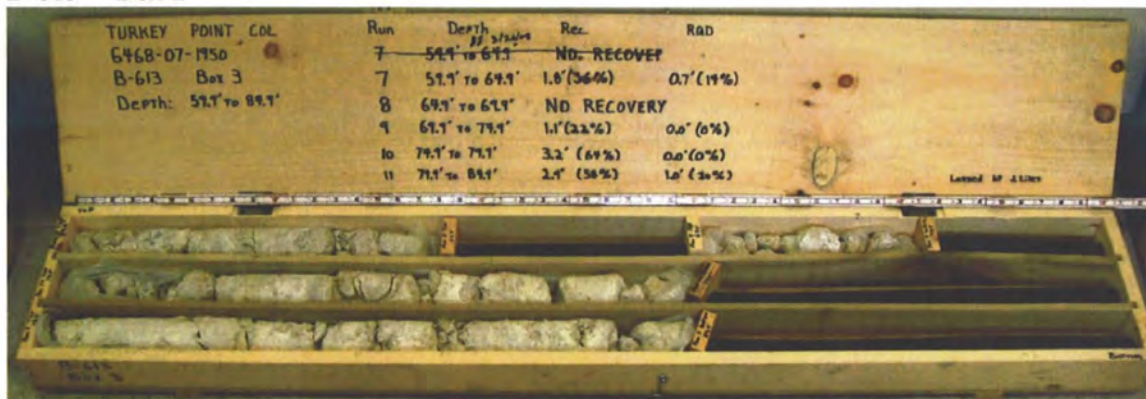
TURKEY POINT COL CORE TURKEY POINT COL GDT 8/18/08



B-613 - Box 1



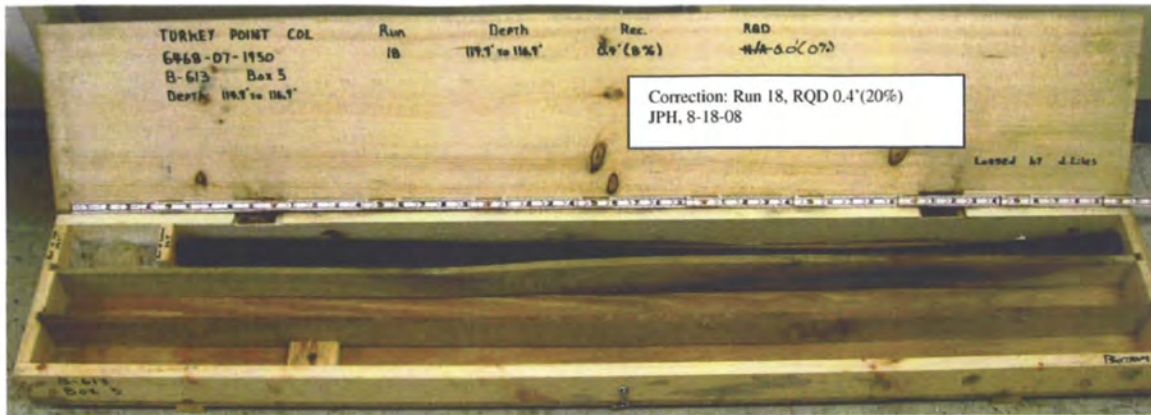
B-613 - Box 2



B-613 - Box 3



B-613 - Box 4



B-613 – Box 5



GEOTECHNICAL BORING LOG

Prepared By JPJ Date 5-30-08

Checked By JM Date 5-30-08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: J. Liles				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550 (Miller)					DRILLER: R. White/ J. Dugger/ C. White					GROUND WATER (ft)		
BORING NO.: B-614					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA		
GROUND ELEV.: -1.5 ft (NAVD88)					NORTHING: 397,204 US ft (NAD83/90)					EASTING: 876,871 US ft (NAD83/90)					24 HR. NA		
TOTAL DEPTH: 128.0 ft					BORING DIAMETER: 4" to 30.0', 3" to 128.0'					CASING DEPTH: 4" to 30.0', 3" to 116.4'					HAMMER (ID):140 lb. Auto (M06)		
DATE STARTED: 3/20/08					COMPLETED: 3/22/08					CORE SIZE: HQ3					BITS USED: 2 7/8" Roller Cone		
ELEV	DEPTH	BLOW COUNT			BLOWS PER FOOT						SAMP.	LOG	SOIL AND ROCK DESCRIPTION				
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO.						
-1.5					Ground Surface								-1.5	0.0			
-1.5	0.0	WOH	WOH	WOH	●						614-1			MUCK, black (2.5Y2.5/1), very soft, wet, fibrous, strong HCl reaction			
-4.3	2.8	WOH	3	23							614-2		-5.3	2.8ft: soft 3.8			
-6.6	5.1	7	10	8							614-3			LIMESTONE, boundstone, white (2.5Y8/1), soft, wet, strong HCl reaction, oolitic (Miami Formation)			
-9.0	7.5	57	9	5							614-4			7.5ft: very soft, fossiliferous			
-11.4	9.9	3	2	6							614-5			9.9ft: trace fine sand			
-14.0	12.5	4	3	6							614-6						
-16.1	14.6	7	30	25							614-7			14.6ft: moderately hard			
-23.7	22.2	3	6	2							614-8			22.2ft: very soft			
-28.5	27.0	4	33	7							614-9		-26.5	LIMESTONE, boundstone, white (2.5Y8/1), medium hard, wet, strong HCl reaction (Upper Fort Thompson Formation) 25.0			
-33.5	32.0																
-33.9	32.4	50/0.4									614-10			32.0ft: hard			
											RUN-1			32.4ft: Switch sampling method to coring			
-37.9	36.4										RUN-2			32.4ft: white (2.5Y8/1), hard, indurated, strong HCl reaction, coralline			
											RUN-3			36.4ft: moderately hard, moderately indurated, few vugs			
-42.9	41.4																
-47.9	46.4										RUN-4			46.4ft: white (2.5Y8/1) to 48.1ft, then gray (10YR6/1) to 49.7 ft, indurated, fossiliferous, recrystallized calcite			
-52.9	51.4										RUN-5		-51.2	LIMESTONE, boundstone, white (2.5Y8/1), hard, moderately indurated to indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) 49.7			
											614-CS-02						
-57.9	56.4										RUN-6			56.4ft: moderately hard, moderately indurated, trace vugs			
-62.9	61.4																
											RUN-7			61.4ft: hard, indurated, trace shell molds and casts			
-67.9	66.4										RUN-8			66.4ft: few vugs			
-72.9	71.4										RUN-9			71.4ft: little vugs			

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 53008



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: J. Liles								
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550 (Miller)		DRILLER: R. White/ J. Dugger/ C. White		GROUND WATER (ft)								
BORING NO.: B-614		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA								
GROUND ELEV.: -1.5 ft (NAVD88)		NORTHING: 397,204 US ft (NAD83/90)		EASTING: 876,871 US ft (NAD83/90)		24 HR. NA								
TOTAL DEPTH: 128.0 ft		BORING DIAMETER: 4" to 30.0', 3" to 128.0'		CASING DEPTH: 4" to 30.0', 3" to 116.4'		HAMMER (ID): 140 lb. Auto (M06)								
DATE STARTED: 3/20/08		COMPLETED: 3/22/08		CORE SIZE: HQ3		BITS USED: 2 7/8" Roller Cone								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				
-76.3					Continued from previous page									
-77.9	76.4													LIMESTONE, boundstone, white (2.5Y8/1), hard, moderately indurated to indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued) 76.4ft: few vugs
-82.9	81.4													
-87.9	86.4													
-92.9	91.4													91.4ft: moderately hard, moderately indurated, little vugs
-97.9	96.4													96.4ft: sandy, few vugs, few shell molds and casts
-102.9	101.4													101.4ft: mostly vugs
-107.9	106.4													106.4ft: some vugs
-112.9	111.4													111.4ft: few vugs
-117.9	116.4	12	6	11										POORLY GRADED SAND (SP), light gray (2.5Y7/2), medium dense, wet, fine grained sand, strong HCl reaction, limestone fragments decreasing with depth (Tamiami Formation) 116.4ft: Switch sampling method to SPT
-128.0	126.5	6	6	6										Silty SAND (SM), greenish gray (10Y5/1), medium dense, wet, fine to medium grained sand, strong HCl reaction Boring Terminated at Elevation -129.5 ft

TURKEY POINT COL BORE: TURKEY POINT COL GDT: 5/30/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: J. Liles			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (Miller)				DRILLER: R. White/ J. Dugger/ C. White				GROUND WATER (ft)	
BORING NO.: B-614				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 397,204 US ft (NAD83/90)				EASTING: 876,871 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 128.0 ft				CASING DEPTH: 4" to 30.0', 3" to 116.4'						HAMMER (ID): 140 lb. Auto (M06)			
DATE STARTED: 3/20/08		COMPLETED: 3/22/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %		SAMP. NO.	STRATA REC (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS		
											Begin Coring @ 32.4 ft		
-33.9	32.4	4.0	0:58 0:49 0:56	(2.6) 65%	(0.0) 0%	RUN-1	(15.9) 92%	(10.0) 58%			LIMESTONE, boundstone, white (2.5Y8/1), medium hard, wet, strong HCl reaction (Upper Fort Thompson Formation) <i>(continued)</i>		
-37.9	36.4		1:28								32.4ft: white (2.5Y8/1), hard, indurated, strong HCl reaction, coralline		
		5.0	1:53 2:17 1:25 1:05 1:06	(5.0) 100%	(3.9) 78%	RUN-2					36.4ft: moderately hard, moderately indurated, few vugs		
-42.9	41.4												
		5.0	1:04 1:14 1:11 1:00 0:53	(5.0) 100%	(4.4) 88%	RUN-3							
-47.9	46.4												
		5.0	1:44 2:18 1:39 2:06 1:34	(5.0) 100%	(3.4) 68%	RUN-4					46.4ft: white (2.5Y8/1) to 48.1ft, then gray (10YR6/1) to 49.7 ft, indurated, fossiliferous, recrystallized calcite		
-52.9	51.4						(49.1) 78%	(31.4) 50%			49.7		
		5.0	2:27 2:04 1:07 1:29 1:05	(5.0) 100%	(4.5) 90%	RUN-5 614-CS-02					LIMESTONE, boundstone, white (2.5Y8/1), hard, moderately indurated to indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)		
-57.9	56.4												
		5.0	0:45 0:37 0:36 0:43 1:04	(4.2) 84%	(1.5) 30%	RUN-6					56.4ft: moderately hard, moderately indurated, trace vugs		
-62.9	61.4												
		5.0	0:52 0:53 1:08 1:20 0:59	(4.4) 88%	(4.0) 80%	RUN-7					61.4ft: hard, indurated, trace shell molds and casts		
-67.9	66.4												
		5.0	0:49 0:43 0:52 1:13 0:24	(4.5) 90%	(3.4) 68%	RUN-8					66.4ft: few vugs		
-72.9	71.4												
		5.0	0:17 0:19 0:47 0:36 0:45	(2.4) 48%	(0.9) 18%	RUN-9					71.4ft: little vugs		
-77.9	76.4												
		5.0	1:32 0:43 0:17 1:12 1:10	(3.6) 72%	(2.8) 56%	RUN-10					76.4ft: few vugs		
-82.9	81.4												
		5.0	0:47 0:41 0:43 0:41 0:30	(3.6) 72%	(3.2) 64%	RUN-11 614-CS-04							
-87.9	86.4												
		5.0	0:21 0:27 0:46 1:58 1:16	(2.8) 56%	(1.4) 28%	RUN-12							
-92.9	91.4												
		5.0	0:54 0:42 0:41 0:34 0:22	(4.5) 90%	(2.0) 40%	RUN-13					91.4ft: moderately hard, moderately indurated, little vugs		
-97.9	96.4												
		5.0	0:17 0:21 0:18 0:15 0:34	(2.6) 52%	(0.4) 8%	RUN-14					96.4ft: sandy, few vugs, few shell molds and casts		
-102.9	101.4												
		5.0	0:23 0:12 0:18 0:24 0:23	(4.9) 98%	(4.0) 80%	RUN-15					101.4ft: mostly vugs		
-107.9	106.4												

TURKEY POINT COL CORE TURKEY POINT G/PJ TURKEY POINT COL GDT 5-30-08

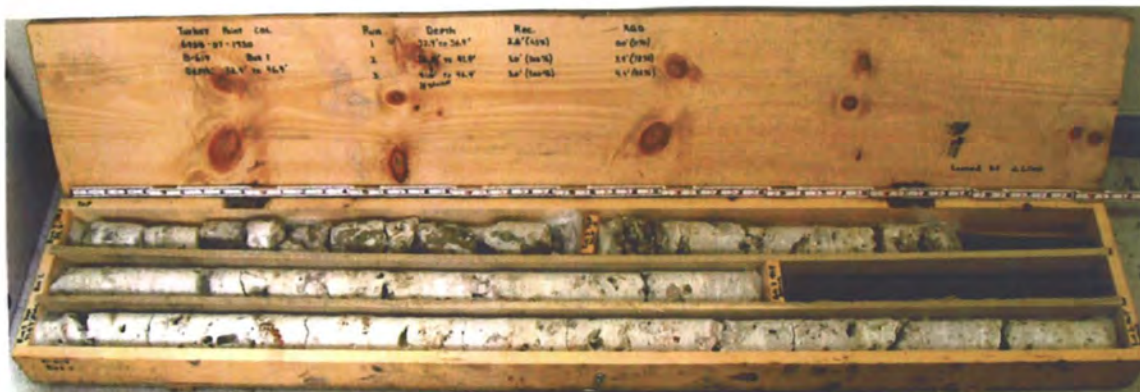


SHEET 2 OF 2

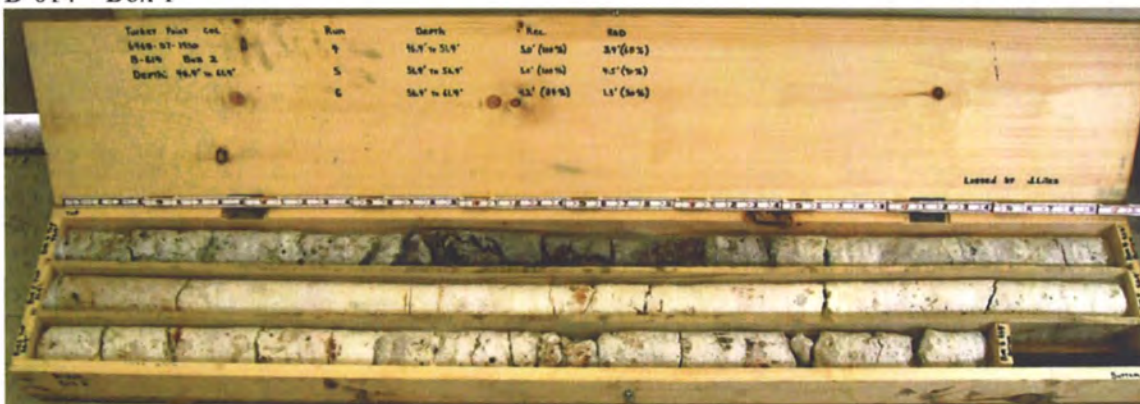
BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: J. Liles	
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550 (Miller)		DRILLER: R. White/ J. Dugger/ C. White		GROUND WATER (ft)	
BORING NO.: B-614		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: -1.5 ft (NAVD88)		NORTHING: 397,204 US ft (NAD83/90)		EASTING: 876,871 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 128.0 ft		CASING DEPTH: 4" to 30.0', 3" to 116.4'				HAMMER (ID): 140 lb. Auto (M06)	
DATE STARTED: 3/20/08		COMPLETED: 3/22/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)	

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-112.9	111.4	5.0	0:15 0:26 0:35 0:41 0:43	(3.5) 70%	(1.6) 32%	RUN-16				106.4ft. some vugs LIMESTONE, boundstone, white (2.5Y8/1), hard, moderately indurated to indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)
		5.0	0:24 0:23 0:20 0:17 0:09	(1.4) 28%	(0.0) 0%	RUN-17	(0.0) 0%	(NA)		111.4ft. few vugs
-117.9	116.4									POORLY GRADED SAND (SP), light gray (2.5Y7/2), medium dense, wet, fine grained sand, strong HCl reaction, limestone fragments decreasing with depth (Tamiami Formation)
										Coring Terminated at Elevation -117.9

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5:30 08



B-614 - Box 1



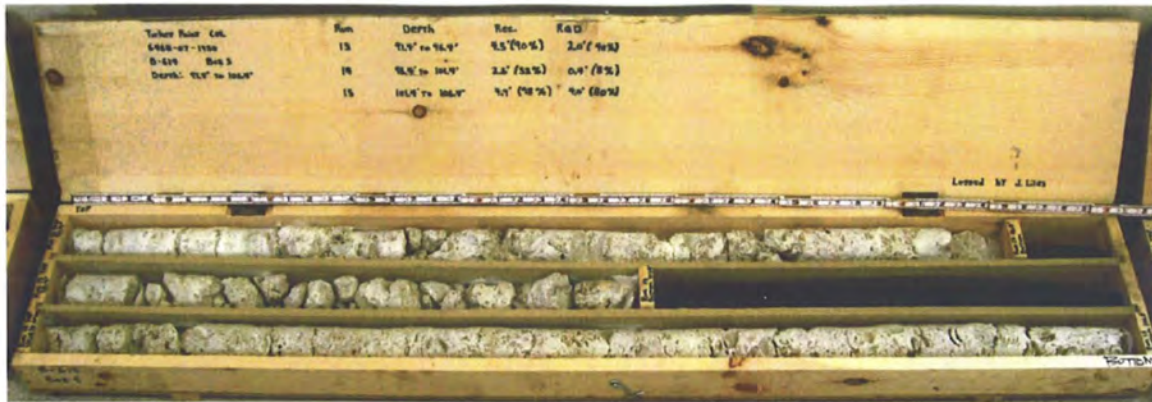
B-614 - Box 2



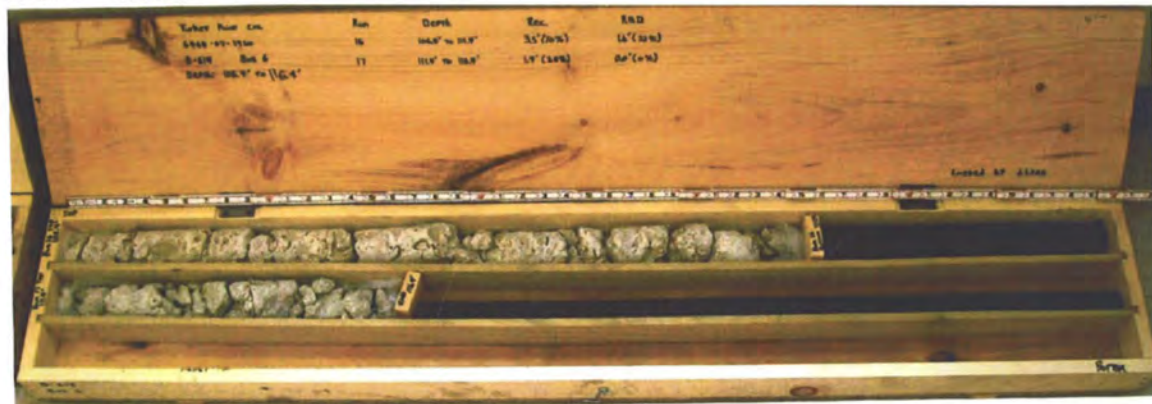
B-614 - Box 3



B-614 - Box 4



B-614 - Box 5



B-614 - Box 6

Revised
9-29-08

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade		GEOLOGIST: G. Pillappa					
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-55 LC (RAL)			DRILLER: R. Banks/ J. Rosser			GROUND WATER (ft)				
BORING NO.: B-615			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: -1.5 ft (NAVD88)			NORTHING: 397,167 US ft (NAD83/90)			EASTING: 876,762 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 150.6 ft		BORING DIAMETER: 4" to 23.6', 3" to 150.6'			CASING DEPTH: 4" to 23.6', 3" to 117.3'			HAMMER (ID):140 lb. Auto (MEC-02)					
DATE STARTED: 3/24/08		COMPLETED: 3/26/08		CORE SIZE: HQ3			BITS USED: 2 7/8" & 3 7/8" Tricones						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	▼ MOI	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-1.5					Ground Surface								
-1.5	0.0	WOH	WOH	WOH	0								-1.5
-4.3	2.8												
-6.0	4.5	WOH	WOH	WOH	0								-6.0
-8.5	7.0	1	4	5	9								-4.5
-10.5	9.0	50/0.5								50/0.5			
-13.0	11.5	2	8	8	16								
-14.7	13.2	6	27	14			41						
		7	8	6	14								
-19.8	18.3												
		11	5	9	14								
-24.5	23.0												
-26.0	24.5	5	11	50/0.5									-25.5
-26.8	25.3									50/0.5			24.0
-31.8	30.3												
-36.8	35.3												
-41.8	40.3												
-46.8	45.3												
-51.8	50.3												-49.5
													48.0
-56.8	55.3												
-61.8	60.3												
-66.8	65.3												
-71.8	70.3												

TURKEY POINT COL BORE TURKEY POINT COL GDT 9/29/08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: G. Pillappa			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-55 LC (RAL)				DRILLER: R. Banks/ J. Rosser				GROUND WATER (ft)	
BORING NO.: B-615				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 397,167 US ft (NAD83/90)				EASTING: 876,762 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 150.6 ft		BORING DIAMETER: 4" to 23.6', 3" to 150.6'				CASING DEPTH: 4" to 23.6', 3" to 117.3'				HAMMER (ID): 140 lb. Auto (MEC-02)			
DATE STARTED: 3/24/08		COMPLETED: 3/26/08		CORE SIZE: HQ3				BITS USED: 2 7/8" & 3 7/8" Tricones					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	▼ MOI	L O G	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-76.3					Continued from previous page								
-76.8	75.3												LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, trace shells, few vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-81.8	80.3												Silty SAND (SM), white (5Y8/1), wet, trace shell fragments, strong HCl reaction
-84.8	83.3												LIMESTONE, boundstone, white (5Y8/1), hard, indurated, trace fine sand, fossiliferous, strong HCl reaction, few vugs
-88.8	87.3												87.3ft: few shell molds and casts
-93.8	92.3												
-98.8	97.3												97.3ft: coralline, little shell molds and casts
-103.8	102.3												
-108.8	107.3												107.3ft: few to little shell molds and casts
-113.8	112.3												
-118.8	117.3												Silty SAND (SM), pale yellow (5Y8/2), very dense, moist, fine grained sand, limestone fragments, strong HCl reaction (Tamiami Formation)
		27	22	31									117.3ft: Switch sampling method to SPT
-128.5	127.0												
		4	8	8									127ft: dark greenish gray (10Y4/1), medium dense, weak HCl reaction
-140.6	139.1												
		27	24	16									139.1ft: dense, trace shell fragments
-150.6	149.1												

TURKEY POINT COL BORE TURKEY POINT GP1 TURKEY POINT COL GDT 9/29/08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: G. Pillappa			
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-55 LC (RAL)			DRILLER: R. Banks/ J. Rosser			GROUND WATER (ft)			
BORING NO.: B-615			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA			
GROUND ELEV.: -1.5 ft (NAVD88)			NORTHING: 397,167 US ft (NAD83/90)			EASTING: 876,762 US ft (NAD83/90)			24 HR. NA			
TOTAL DEPTH: 150.6 ft			BORING DIAMETER: 4" to 23.6', 3" to 150.6'			CASING DEPTH: 4" to 23.6', 3" to 117.3'			HAMMER (ID): 140 lb. Auto (MEC-02)			
DATE STARTED: 3/24/08			COMPLETED: 3/26/08			CORE SIZE: HQ3			BITS USED: 2 7/8" & 3 7/8" Tricones			
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI	
-151.1					Continued from previous page							
	6	10	12		22					615-13		-152.1 149.1ft: medium dense Boring Terminated at Elevation -152.1 ft 150.6

TURKEY POINT COL BORE TURKEY POINT GPI TURKEY POINT COL GDT 9/29/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: G. Pillappa		
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-55 LC (RAL)				DRILLER: R. Banks/ J. Rosser		GROUND WATER (ft)		
BORING NO.: B-615				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core		0 HR. NA		
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 397,167 US ft (NAD83/90)				EASTING: 876,762 US ft (NAD83/90)		24 HR. NA		
TOTAL DEPTH: 150.6 ft				CASING DEPTH: 4" to 23.6', 3" to 117.3'						HAMMER (ID): 140 lb. Auto (MEC-02)		
DATE STARTED: 3/24/08		COMPLETED: 3/26/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)						
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS
												Begin Coring @ 24.5 ft
-26.0	24.5	0.8	0:30/0.8	(0.7)	(0.5)		RUN-1	(17.2)	(12.5)			LIMESTONE, boundstone, white (10YR8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation)
-26.8	25.3	5.0	0:42 0:19 0:34 0:26 0:21	88% (3.3) 66%	63% (2.5) 50%		RUN-2	73%	53%			24.5ft: Switch sampling method to coring (continued) 24.5ft: white, 10YR8/1, hard, indurated, coralline, strong HCl reaction, recrystallized calcite 25.3ft: white (10YR8/1), to light yellowish brown (10YR6/4) 30.3ft: white (10YR8/1), fossiliferous
-31.8	30.3	5.0	0:32 0:46 0:35 0:33 0:23	(4.6) 92%	(3.6) 72%		RUN-3					
-36.8	35.3	5.0	0:41 0:22 0:23 0:23 0:31	(2.3) 46%	(0.5) 10%		RUN-4					35.3ft: few vugs
-41.8	40.3	5.0	0:25 0:15 0:26 0:39 0:40	(3.7) 74%	(2.9) 58%		RUN-5					40.3ft: white (2.5Y8/1)
-46.8	45.3	5.0	0:34 0:33 0:25 0:17 0:34	(4.9) 98%	(4.8) 96%		RUN-6					45.3ft: white (2.5Y8/1) to 45.7ft, then gray (10YR6/1) to 48.0ft
-51.8	50.3	5.0	1:01 0:28 0:25 0:19 0:24	(5.0) 100%	(4.2) 84%		RUN-7	(22.0) 70%	(13.2) 42%			LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, trace shells, few vugs, strong HCl reaction (Lower Fort Thompson Formation)
-56.8	55.3	5.0	0:22 0:21 0:25 0:23 0:21	(4.9) 98%	(3.1) 62%		RUN-8					
-61.8	60.3	5.0	0:23 0:23 0:22 0:17 0:21	(2.0) 40%	(0.0) 0%		RUN-9					
-66.8	65.3	5.0	0:40 0:17 0:21 0:16 0:17	(3.1) 62%	(1.7) 34%		RUN-10					
-71.8	70.3	5.0	0:10 0:15 0:20 0:36 0:21	(0.8) 16%	(0.4) 8%		RUN-11					70.3ft: white (5Y8/1), trace fine sand
-76.8	75.3	5.0	0:32 0:25 0:29 0:35 0:40	(3.9) 78%	(1.5) 30%		RUN-12					
-81.8	80.3	3.0	0:34 0:31 0:17	(3.0) 100%	(0.5) 17%		RUN-13	(2.0) 67%	(NA)			Silty SAND (SM), white (5Y8/1), wet, trace shell fragments, strong HCl reaction
-84.8	83.3	4.0	0:44 0:32 0:21 0:42	(3.3) 83%	(2.9) 73%		RUN-14	(22.4) 73%	(11.0) 36%			LIMESTONE, boundstone, white (5Y8/1), hard, indurated, trace fine sand, fossiliferous, strong HCl reaction, few vugs
-88.8	87.3	5.0	0:22 0:28 0:22 0:26 0:24	(4.6) 92%	(2.3) 46%		RUN-15					87.3ft: few shell molds and casts
-93.8	92.3	5.0	0:34 0:25 0:22 0:29 0:49	(1.3) 26%	(0.0) 0%		RUN-16					
-98.8	97.3	5.0	0:25 0:16	(2.8) 56%	(0.0) 0%		RUN-17					97.3ft: coralline, little shell molds and casts

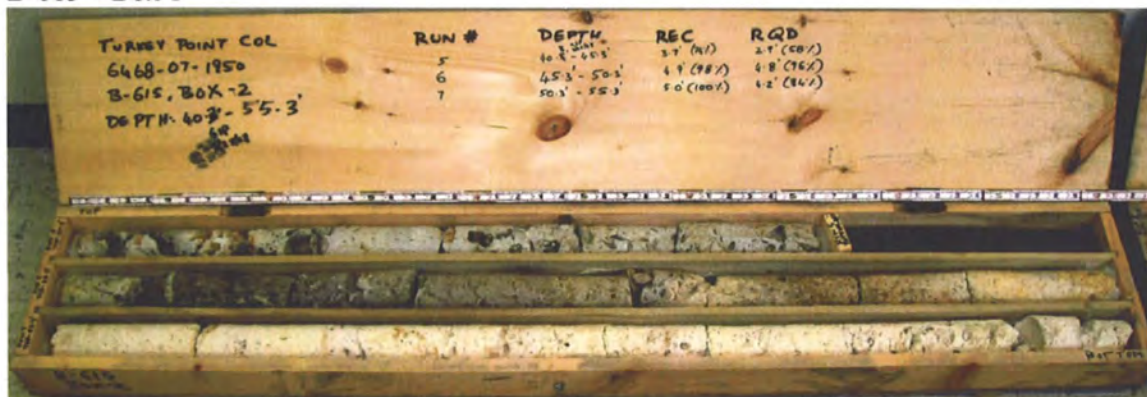
TURKEY POINT COL CORE TURKEY POINT GP TURKEY POINT COL GOT 5/30/08

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade	GEOLOGIST: G. Pillappa
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-55 LC (RAL)	DRILLER: R. Banks/ J. Rosser		GROUND WATER (ft)
BORING NO.: B-615		DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core		
GROUND ELEV.: -1.5 ft (NAVD88)		NORTHING: 397,167 US ft (NAD83/90)	EASTING: 876,762 US ft (NAD83/90)		24 HR. NA
TOTAL DEPTH: 150.6 ft		CASING DEPTH: 4" to 23.6', 3" to 117.3'			HAMMER (ID): 140 lb. Auto (MEC-02)
DATE STARTED: 3/24/08	COMPLETED: 3/26/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)		

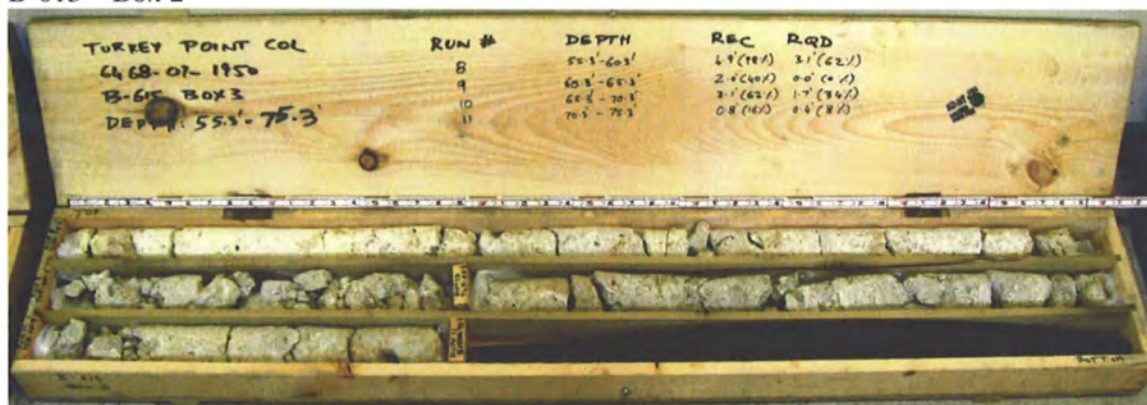
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Continued from previous page
-103.8	102.3		0:12 0:15 0:27							LIMESTONE, boundstone, white (5Y8/1), hard, indurated, trace fine sand, fossiliferous, strong HCl reaction, few vugs (continued)
		5.0	0:29 0:25 0:19 0:23 0:29	(4.9) 98%	(3.6) 72%	RUN-18				
-108.8	107.3									
		5.0	0:28 0:12 0:14 0:17 0:14	(4.0) 80%	(1.7) 34%	RUN-19				107.3ft: few to little shell molds and casts
-113.8	112.3									
		5.0	0:31 0:24 0:18 0:50 0:24	(0.5) 10%	(0.0) 0%	RUN-20	(0.0) 0%	(NA)		-114.5 _____ 113.0
-118.8	117.3									Silty SAND (SM), pale yellow (5Y8/2), very dense, moist, fine grained sand, limestone fragments, strong HCl reaction (Tamiami Formation)
										-118.8 _____ 117.3
										Coring Terminated at Elevation -118.8



B-615 - Box 1



B-615 - Box 2



B-615 - Box 3



B-615 - Box 4



B-615 - Box 5



B-615 - Box 6



GEOTECHNICAL BORING LOG

Prepared By PPZ Date 5-30-08Checked By JM Date 5-20-08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: H. Lyatuu			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)	
BORING NO.: B-616				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.2 ft (NAVD88)				NORTHING: 397,208 US ft (NAD83/90)				EASTING: 876,724 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 125.0 ft		BORING DIAMETER: 4" to 35.0', 3" to 125.0'				CASING DEPTH: 4" to 35.0', 3" to 123.0'				HAMMER (ID):140 lb. Auto (MEC-03)			
DATE STARTED: 3/19/08		COMPLETED: 3/21/08		CORE SIZE: HQ3				BITS USED: 4" & 3" Tricones					
ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP NO	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-1.2					Ground Surface							-1.2 0.0	
-1.2	0.0	WOR	WOR	WOR	0							MUCK, very dark gray (7.5YR3/1), very soft, wet, mostly organics, weak HCl reaction	
-3.7	2.5				0								
-6.2	5.0	WOH	WOH	WOH	0							2.5ft: trace shell fragments, weak HCl reaction	
-8.7	7.5				0								
-11.2	10.0	11	1	1	2							Silty SAND with limestone fragments (SM), greenish gray (10Y6/1), very loose, wet, fine grained sand	
-13.7	12.5	2	3	25	28								
-16.2	15.0	4	9	5	14							MUCK with limestone fragments, brown (7.5YR4/3), firm, wet, mostly organics	
-20.7	19.5	2	3	4	7								
-25.7	24.5	3	28	39	5							LIMESTONE, white (10YR8/1), soft, wet, fossiliferous, strong HCl reaction (Miami Formation)	
-30.7	29.5	4	5	7	12								
-35.7	34.5	9	19	50/0.3								12.5ft: boundstone, very soft, oolitic	
-37.2	36.0												
-39.2	38.0											POORLY GRADED SAND with limestone fragments (SP), light reddish brown (2.5YR6/3), loose, wet, fine to coarse grained sand, strong HCl reaction	
-44.2	43.0												
-49.2	48.0											LIMESTONE, boundstone, white (10YR8/1), very soft, wet, fossiliferous, strong HCl reaction, trace fine grained sand, oolitic	
-54.2	53.0												
-59.2	58.0											23.0ft: loss of circulation	
-64.2	63.0												
-69.2	68.0											LIMESTONE, boundstone, white (2.5Y8/1), hard, wet, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation)	
-74.2	73.0												
												29.5ft: mottled, light brownish gray (2.5Y6/2), very soft, trace fine grained sand, strong HCl reaction	
												34.5ft: hard, mottled light gray (7.5Y7/1)	
												36.0ft: Switch sampling method to coring	
												36.0ft: white (10YR8/1), hard, indurated, coralline, trace sand, fossiliferous, strong HCl reaction, trace shell casts, few vugs	
												43.0ft: white (10YR8/1), to 46.1ft then gray (10YR6/1) to 48.0ft	
												LIMESTONE, boundstone, white (10YR8/1), hard, indurated, few vugs, porous, fossiliferous, trace shell casts, trace recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation)	
												53.0ft: moderately hard, moderately indurated	
												68.0ft: sandy	

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08

DCN# TUR512



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: H. Lyatuu
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-616	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.2 ft (NAVD88)	NORTHING: 397,208 US ft (NAD83/90)	EASTING: 876,724 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 125.0 ft	CASING DEPTH: 4" to 35.0', 3" to 123.0'	HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 3/19/08	COMPLETED: 3/21/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	RQD (ft) %	SAMP. NO	REC (ft) %	RQD (ft) %	LOG	DESCRIPTION AND REMARKS
										Begin Coring @ 36.0 ft
-37.2	36.0	2.0	1:23	(2.0)	(2.0)	RUN-1	(11.9)	(9.5)		LIMESTONE, boundstone, white (2.5Y8/1), hard, wet, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation) <i>(continued)</i>
-39.2	38.0	5.0	1:21	100%	100%	616-CS-01	99%	79%		36.0ft: white (10YR8/1), hard, indurated, coralline, trace sand, fossiliferous, strong HCl reaction, trace shell casts, few vugs
			2:05	(5.0)	(4.3)	RUN-2				
			2:29	100%	86%					
-44.2	43.0	5.0	2:03							
			2:37							
			2:18							
			1:10	(4.9)	(3.2)	RUN-3				43.0ft: white (10YR8/1), to 46.1ft then gray (10YR6/1) to 48.0ft
			1:50	98%	64%					
-49.2	48.0	5.0	1:00							
			3:00							
			3:11							
			1:15	(5.0)	(4.7)	RUN-4	(47.3)	(26.8)		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, few vugs, porous, fossiliferous, trace shell casts, trace recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation)
			1:01	100%	94%		71%	40%		
-54.2	53.0	5.0	1:47							
			1:35							
			1:10							
			0:24	(5.0)	(4.7)	RUN-5				53.0ft: moderately hard, moderately indurated
			0:59	100%	94%					
-59.2	58.0	5.0	0:36							
			0:45							
			0:42							
			1:06	(4.0)	(1.7)	RUN-6				
			1:00	80%	34%					
-64.2	63.0	5.0	0:53			616-CS-04				
			0:59							
			1:20							
			1:21	(3.8)	(1.8)	RUN-7				
			1:04	76%	36%					
-69.2	68.0	5.0	0:58							
			0:36							
			0:23							
			0:16	(1.8)	(0.4)	RUN-8				68.0ft: sandy
			0:30	36%	8%					
-74.2	73.0	5.0	0:08							
			0:15							
			0:31							
			0:16	(3.2)	(1.6)	RUN-9				
			0:58	64%	32%					
-79.2	78.0	5.0	1:47							
			1:36							
			1:28	(2.0)	(0.4)	RUN-10				
			1:19	40%	8%					
-84.2	83.0	5.0	0:08							
			0:20							
			0:28							
			0:33	(2.3)	(0.0)	RUN-11				
			0:25	46%	0%					
-89.2	88.0	5.0	0:10							
			0:31							
			1:26							
			1:35	(4.8)	(3.0)	RUN-12				88.0ft: hard, indurated, trace shell casts
			1:08	96%	60%					
-94.2	93.0	5.0	0:55							
			0:51							
			0:54							
			0:58	(3.0)	(2.2)	RUN-13				93.0ft: hard to moderately hard, indurated to moderately indurated
			0:24	60%	44%					
-99.2	98.0	5.0	0:15							
			0:18							
			0:31							
			0:20	(3.8)	(2.7)	RUN-14				98.0ft: hard, indurated, some shell casts
			0:28	76%	54%					
-104.2	103.0	5.0	0:47							
			0:37							
			0:50							
			0:52	(4.2)	(1.6)	RUN-15				103.0ft: mostly shell casts
			0:48	84%	32%					
-109.2	108.0	5.0	0:53							
			0:56							
			0:47							
			1:00	(3.4)	(2.0)	RUN-16				108.0ft: mottled brownish yellow (10YR6/8)
			0:42	68%	40%					
			1:04							

TURKEY POINT COL CORE TURKEY POINT COL GDT 5:30 08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: H. Lyatuu
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-616	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.2 ft (NAVD88)	NORTHING: 397,208 US ft (NAD83/90)	EASTING: 876,724 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 125.0 ft	CASING DEPTH: 4" to 35.0', 3" to 123.0'	HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 3/19/08	COMPLETED: 3/21/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-114.2	113.0	5.0	0.28 0.43	(1.0) 20%	(0.0) 0%	RUN-17	(0.4) 5%	(NA)		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, few vugs, porous, fossiliferous, trace shell casts, trace recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-119.2	118.0	5.0	0.12 0.12 0.39			RUN-18				113.0ft: moderately hard, moderately indurated, sandy
			0.35 0.28 0.46 0.08 0.09	(0.4) 8%	(0.0) 0%					Silty SAND (SM), light brownish gray (10YR6/2), medium dense, wet, fine to medium grained sand, weak HCl reaction on sand, and lenses of fine to coarse LIMESTONE gravel, boundstone, moderately hard, moderately indurated, sandy, fossiliferous (Tamiami Formation)
-124.2	123.0									-124.2 123.0
										Coring Terminated at Elevation -124.2

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDI 5:30.08



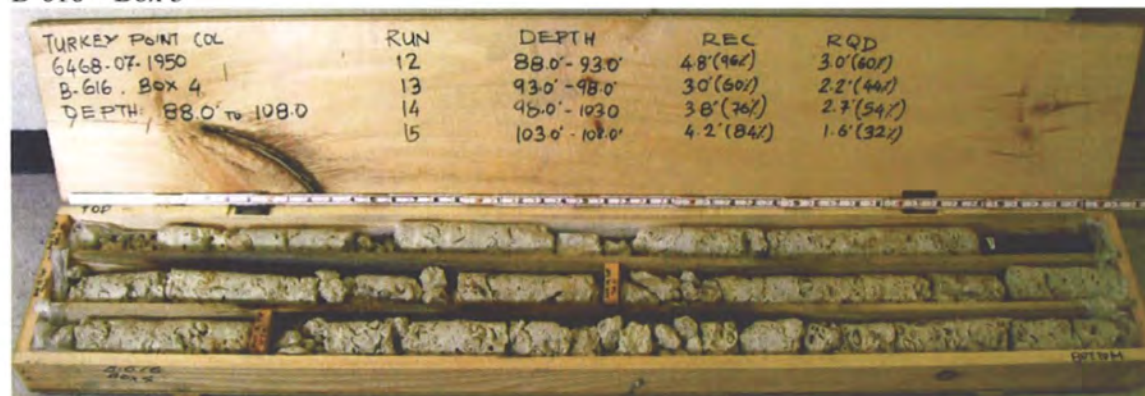
B-616 - Box 1



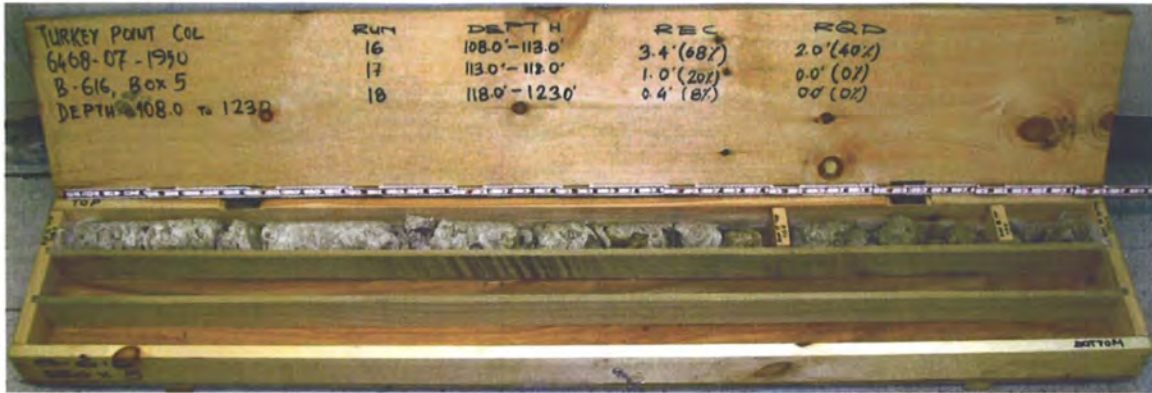
B-616 - Box 2



B-616 - Box 3



B-616 - Box 4



B-616 - Box 5



GEOTECHNICAL BORING LOG

Prepared By 2024 Date 5-30-08Checked By DM Date 5-30-08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: H. Lyatuu				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550 (ATL)					DRILLER: L. Carter/ J. Landeros					GROUND WATER (ft)		
BORING NO.: B-617					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA		
GROUND ELEV.: -1.4 ft (NAVD88)					NORTHING: 397,288 US ft (NAD83/90)					EASTING: 876,722 US ft (NAD83/90)					24 HR. NA		
TOTAL DEPTH: 126.1 ft			BORING DIAMETER: 4" to 31.0', 3" to 126.1'					CASING DEPTH: 4" to 31.0', 3" to 120.0'					HAMMER (ID):140 lb. Auto (MEC-03)				
DATE STARTED: 3/13/08			COMPLETED: 3/19/08			CORE SIZE: HQ3			BITS USED: 4" & 3" Roller Cones								
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT						SAMP.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO						
-1.4					Ground Surface												
-1.4	0.0	WOR	WOR	WOR	0									-1.4	0.0	MUCK, pale brown (10YR6/3), very soft, wet, few fine grained sand, mostly organic, strong HCl reaction	
-3.9	2.5	WOH	4	6	10									-3.4	2.0		
-6.4	5.0	8	6	6	12											LIMESTONE, boundstone, white (10YR8/1),very soft, wet, strong HCl reaction, oolitic (Miami Formation) 5.0ft: fossiliferous	
-8.9	7.5	13	6	6	12												
-11.4	10.0	5	5	24	29											10ft: soft	
-13.9	12.5	3	7	12	19											12.5ft: very soft	
-16.4	15.0	18	13	30	43											15.0ft: white (2.5Y8/1), medium hard	
-20.9	19.5	5	5	5	10											19.5ft: very soft	
-25.9	24.5	1	5	7	12											LIMESTONE, boundstone, white (10YR8/1), mottled very pale brown (10YR7/4), and gray (10YR3/1), very soft, wet, trace recrystallized calcite, strong HCl reaction (Upper Fort Thompson Formation)	
-30.9	29.5																
-31.8	30.4	20	50/0.4													25.0ft: loss of circulation	
-34.7	33.3															29.5ft hard	
-39.7	38.3															30.4ft: Switch sampling method to coring	
-44.7	43.3															30.4ft: white (10YR8/1), hard, indurated, coralline, fossiliferous, strong HCl reaction, few vugs	
-49.7	48.3															43.3ft: white (10YR8/1), to 45.5ft then gray (10YR6/1), to 47.7ft, trace recrystallized calcite	
-54.7	53.3																
-59.7	58.3															LIMESTONE, boundstone, white (10YR8/1) and (2.5Y8/1), hard, indurated, trace to few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)	
-64.7	63.3															53.3ft: moderately hard to hard, moderately indurated to indurated	
-69.7	68.3															63.3ft: moderately hard, moderately indurated	
-74.7	73.3																
																68.3ft: moderately hard to hard, moderately indurated to indurated	
																73.3ft: hard, indurated	

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: H. Lyatuu							
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550 (ATL)		DRILLER: L. Carter/ J. Landeros		GROUND WATER (ft)							
BORING NO.: B-617		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA							
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 397,288 US ft (NAD83/90)		EASTING: 876,722 US ft (NAD83/90)		24 HR. NA							
TOTAL DEPTH: 126.1 ft		BORING DIAMETER: 4" to 31.0', 3" to 126.1'		CASING DEPTH: 4" to 31.0', 3" to 120.0'		HAMMER (ID): 140 lb. Auto (MEC-03)							
DATE STARTED: 3/13/08		COMPLETED: 3/19/08		CORE SIZE: HQ3		BITS USED: 4" & 3" Roller Cones							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-76.2		Continued from previous page											
-79.7	78.3												<p>LIMESTONE, boundstone, white (10YR8/1) and (2.5Y8/1), hard, indurated, trace to few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) <i>(continued)</i></p> <p>98.3ft: little shell molds and casts</p> <p>108.3ft: hard to moderately hard, indurated to moderately indurated, trace shell molds and casts</p> <p>113.3ft: hard, indurated</p> <p>Silty SAND (SM), light gray (7.5YR7/1), medium dense, wet, fine grained sand, strong HCl reaction (Tamiami Formation)</p> <p>118.8ft: Switch sampling method to SPT</p> <p>124.6ft: very pale brown (10YR7/6), loose, weak HCl reaction</p> <p>Boring Terminated at Elevation -127.5 ft</p>
-81.7	80.3											RUN-11	
-84.7	83.3											RUN-12	
-89.7	88.3											RUN-13	
-94.7	93.3											RUN-14	
-99.7	98.3											RUN-15	
-104.7	103.3											RUN-16	
-109.7	108.3											RUN-17	
-114.7	113.3											RUN-18	
-120.2	118.8	4	17	11								RUN-19	
-126.0	124.6	4	4	3								617-11	
												617-12	

TURKEY POINT COL BORE TURKEY POINT COL GDT 5 30 08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: H. Lyatuu			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)	
BORING NO.: B-617				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 397,288 US ft (NAD83/90)				EASTING: 876,722 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 126.1 ft				CASING DEPTH: 4" to 31.0', 3" to 120.0'						HAMMER (ID): 140 lb. Auto (MEC-03)			
DATE STARTED: 3/13/08		COMPLETED: 3/19/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %RQD (ft) %		SAMP. NO.	STRATA REC. (ft) %RQD (ft) %		L O G	DESCRIPTION AND REMARKS			
										Begin Coring @ 30.4 ft			
-31.8	30.4	2.9	1:37 1:52 0:49/0.9	(2.9) 100%	(2.7) 93%	RUN-1	(16.5) 95%	(15.2) 88%		LIMESTONE, boundstone, white (10YR8/1), mottled very pale brown (10YR7/4), and gray (10YR3/1), very soft, wet, trace recrystallized calcite, strong HCl reaction (Upper Fort Thompson Formation)			
		5.0	1:24 1:18 1:23 1:36 1:09	(4.4) 88%	(4.2) 84%	RUN-2				25.0ft. loss of circulation (continued) 30.4ft: white (10YR8/1), hard, indurated, coralline, fossiliferous, strong HCl reaction, few vugs			
-39.7	38.3												
		5.0	1:44 1:51 2:03 1:40 1:56	(5.0) 100%	(5.0) 100%	RUN-3							
-44.7	43.3												
		5.0	1:49 3:23 2:19 2:37 2:15	(4.7) 94%	(3.8) 76%	RUN-4				43.3ft: white (10YR8/1), to 45.5ft then gray (10YR6/1), to 47.7ft. trace recrystallized calcite			
-49.7	48.3												
		5.0	1:11 1:10 1:18 1:17 1:15	(4.6) 92%	(4.3) 86%	RUN-5	(52.0) 78%	(33.0) 50%		LIMESTONE, boundstone, white (10YR8/1) and (2.5Y8/1), hard, indurated, trace to few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)			
-54.7	53.3												
		5.0	0:36 2:05 0:58 1:10 1:10	(3.8) 76%	(3.0) 60%	RUN-6				53.3ft: moderately hard to hard, moderately indurated to indurated			
-59.7	58.3												
		5.0	1:01 0:58 1:20 1:18 1:07	(4.7) 94%	(4.2) 84%	RUN-7							
-64.7	63.3												
		5.0	0:48 0:52 1:08 0:38 0:25	(3.5) 70%	(1.7) 34%	RUN-8				63.3ft: moderately hard, moderately indurated			
-69.7	68.3												
		5.0	0:37 0:55 1:00 1:49 2:11	(3.5) 70%	(1.8) 36%	RUN-9				68.3ft: moderately hard to hard, moderately indurated to indurated			
-74.7	73.3												
		5.0	0:36 0:24 0:33 1:06 1:15	(1.5) 30%	(0.0) 0%	RUN-10				73.3ft: hard, indurated			
-79.7	78.3												
		2.0	1:35 2:01	(2.0) 100%	(0.8) 40%	RUN-11							
-81.7	80.3												
		3.0	0:36 1:15 1:40	(2.8) 93%	(2.0) 67%	RUN-12							
-84.7	83.3												
		5.0	0:10 0:14 0:20 0:28 1:35	(3.5) 70%	(0.8) 16%	RUN-13							
-89.7	88.3												
		5.0	1:03 1:13 1:11 1:18 0:52	(4.3) 86%	(2.6) 52%	RUN-14							
-94.7	93.3												
		5.0	0:38 0:10 0:10 0:40 1:01	(3.5) 70%	(2.1) 42%	RUN-15							
-99.7	98.3												
		5.0	0:45 0:57 0:47 1:00 1:02	(5.0) 100%	(3.6) 72%	RUN-16				98.3ft: little shell molds and casts			
-104.7	103.3												
		5.0	0:53 0:55	(5.0) (4.1)	RUN-17								

TURKEY POINT COL CORE: TURKEY POINT GPJ TURKEY POINT COL.GDT 53008

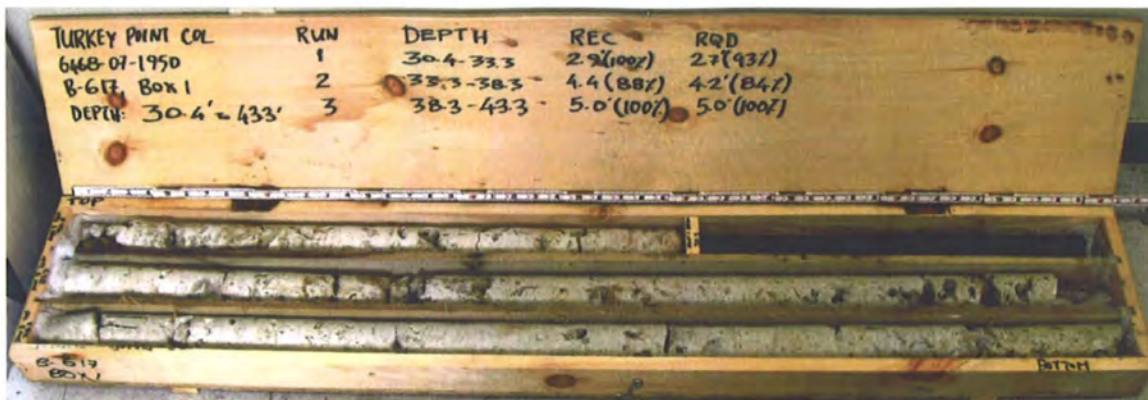


SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: H. Lyatuu
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (ATL)	DRILLER: L. Carter/ J. Landeros	GROUND WATER (ft)
BORING NO.: B-617	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,288 US ft (NAD83/90)	EASTING: 876,722 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 126.1 ft	CASING DEPTH: 4" to 31.0', 3" to 120.0'	HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 3/13/08	COMPLETED: 3/19/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Continued from previous page
-109.7	108.3		0.38 0.42 0.58	100%	82%					LIMESTONE, boundstone, white (10YR8/1) and (2.5Y8/1), hard, indurated, trace to few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)
		5.0	0.23 0.35 0.52 0.53 0.32	(3.4) 68%	(1.5) 30%	RUN-18				108.3ft: hard to moderately hard, indurated to moderately indurated, trace shell molds and casts
-114.7	113.3									
		5.0	0.11 0.23 0.08 0.06 0.08	(0.4) 8%	(0.0) 0%	RUN-19	(0.0) 0%	(NA)		113.3ft: hard, indurated
-119.7	118.3									Silty SAND (SM), light gray (7.5YR7/1), medium dense, wet, fine grained sand, strong HCl reaction (Tamiami Formation)
										Coring Terminated at Elevation -119.7

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



B-617 - Box 1



B-617 - Box 2



B-617 - Box 3



B-617 - Box 4



B-617 - Box 5



GEOTECHNICAL BORING LOG

Prepared By SPZ Date 8-30-08Checked By MM Date 8-30-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: O. Rodriguez					
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-45C (RAL)			DRILLER: D. White/ R. Hall			GROUND WATER (ft)					
BORING NO.: B-618			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA					
GROUND ELEV.: -1.4 ft (NAVD88)			NORTHING: 397,208 US ft (NAD83/90)			EASTING: 876,643 US ft (NAD83/90)			24 HR. NA					
TOTAL DEPTH: 154.7 ft		BORING DIAMETER: 4" to 28.8", 3" to 154.7"		CASING DEPTH: 4" to 28.8", 3" to 133.2'		HAMMER (ID): 140 lb. Auto (MEC-12)								
DATE STARTED: 2/22/08		COMPLETED: 3/4/08		CORE SIZE: HQ3		BITS USED: 2 15/16" Tricone								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI			
-1.4	0.0	WOH	WOH	WOH	Ground Surface					618-1		-1.4	0.0	
-4.2	2.8	3	3	4	7	SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA					618-2		-4.4	3.0
-6.1	4.7	6	6	6	12						618-3		Field notes do not indicate that sample 618-2 was split into separate jars	
-8.8	7.4	9	5	4	9						618-4		LIMESTONE, boundstone, white (10YR8/1), very soft, wet, few to little sand, trace organics, friable, oolitic, trace organics (Miami Formation)	
-11.4	10.0	10	10	13	23						618-5		7.4ft: trace sand 10.0ft: soft	
-13.9	12.5	19	10	9	19						618-6		12.5ft: very soft	
-16.2	14.8	8	7	29	36						618-7		14.8ft: medium hard, moderately indurated	
-18.2	16.8	13	8	5	13						618-8		16.8ft: very soft	
-23.4	22.0	3	2	2	4						618-9		22.0ft: friable	
-28.3	26.9	31	50/0.4		81/0.9						618-10		-26.4	25.0
-29.2	27.8										RUN-1		LIMESTONE, boundstone, white (10YR8/1), to pale yellow (2.5Y8/2), hard, wet, indurated (Upper Fort Thompson Formation)	
-31.7	30.3										RUN-2		27.8ft: switch sampling method to coring 27.8ft: white (5Y8/1), to light greenish gray (5GY8/1), hard, indurated, coralline, fossiliferous, strong HCl reaction, trace to few vugs	
-36.7	35.3										RUN-3		29.0ft: loss of circulation 30.3ft: light greenish gray (5GY8/1) 35.3ft: white (5Y8/1)	
-41.7	40.3										RUN-4		40.3ft: white (N8/), hard to moderately hard, recrystallized calcite	
-46.7	45.3										RUN-5		45.3 to 47.7ft: gray (N6/)	
-51.7	50.3										RUN-6		-49.1	47.7
-56.7	55.3										RUN-7		LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous with few shell molds and casts, trace vugs, strong HCl reaction (Lower Fort Thompson Formation)	
-61.7	60.3										RUN-8		60.3ft: indurated to friable, trace sand	
-66.7	65.3										RUN-9		65.3ft: indurated	
-67.5	66.1										RUN-10		66.1ft: moderately indurated	
-71.7	70.3										RUN-11		70.3ft: trace to few sand	

TURKEY POINT COL BORE - TURKEY POINT COL GDT 5/30/08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: O. Rodriguez	
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-45C (RAL)		DRILLER: D. White/ R. Hall		GROUND WATER (ft)	
BORING NO.: B-618		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 397,208 US ft (NAD83/90)		EASTING: 876,643 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 154.7 ft		BORING DIAMETER: 4" to 28.8', 3" to 154.7'		CASING DEPTH: 4" to 28.8', 3" to 133.2'		HAMMER (ID): 140 lb. Auto (MEC-12)	
DATE STARTED: 2/22/08		COMPLETED: 3/4/08		CORE SIZE: HQ3		BITS USED: 2 15/16" Tricone	

ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-76.2					Continued from previous page								
-76.7	75.3										RUN-12		LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous with few shell molds and casts, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued) 75.3ft: indurated 80.3ft: moderately indurated to indurated, little shell molds and casts
-80.5	79.1										RUN-13		
-81.7	80.3										RUN-14		
-86.7	85.3										RUN-15		
-91.7	90.3										RUN-16		
-96.7	95.3										RUN-17		95.3ft: indurated, few to little shell molds and casts
-101.7	100.3										RUN-18		100.3ft: hard to moderately hard, moderately indurated, little to some shell molds and casts
-106.7	105.3										RUN-19		
-111.7	110.3										RUN-20		110.3ft: moderately hard, friable to moderately indurated
-116.7	115.3										RUN-21		115.3ft: moderately indurated
-124.6	123.2	3	3	4							618-11		116.0ft: Silty SAND (SM), light gray (2.5Y7/2), loose, wet, trace limestone fragments (Tamiami Formation) 123.2ft: Switch sampling method to SPT
-129.6	128.2	2	4	5							618-12		128.2ft: greenish gray (10Y6/1), friable to moderately indurated cemented sand fragments
-134.6	133.2	3	6	3							618-13		
-139.6	138.2	6	10	9							618-14		138.2ft: medium dense
-144.6	143.2	4	9	12							618-15		
-149.6	148.2	4	5	10							618-16		

TURKEY POINT COL BORE, TURKEY POINT COL GDT 5/30/08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: O. Rodriguez								
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-45C (RAL)		DRILLER: D. White/ R. Hall		GROUND WATER (ft)								
BORING NO.: B-618		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA								
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 397,208 US ft (NAD83/90)		EASTING: 876,643 US ft (NAD83/90)		24 HR. NA								
TOTAL DEPTH: 154.7 ft		BORING DIAMETER: 4" to 28.8', 3" to 154.7'		CASING DEPTH: 4" to 28.8', 3" to 133.2'		HAMMER (ID): 140 lb. Auto (MEC-12)								
DATE STARTED: 2/22/08		COMPLETED: 3/4/08		CORE SIZE: HQ3		BITS USED: 2 15/16" Tricone								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				
-151.0					Continued from previous page									
-154.6	153.2													116.0ft: Silty SAND (SM), light gray (2.5Y7/2), loose, wet, trace limestone fragments (Tamiami Formation) (continued)
		4	6	9										
														Boring Terminated at Elevation -156.1 ft

TURKEY POINT COL BORE TURKEY POINT GP1 TURKEY POINT COL GDT 5/30/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: O. Rodriguez
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-45C (RAL)	DRILLER: D. White/ R. Hall	GROUND WATER (ft)
BORING NO.: B-618	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,208 US ft (NAD83/90)	EASTING: 876,643 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 154.7 ft	CASING DEPTH: 4" to 28.8', 3" to 133.2'	HAMMER (ID): 140 lb. Auto (MEC-12)	
DATE STARTED: 2/22/08	COMPLETED: 3/4/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Begin Coring @ 27.8 ft
-29.2	27.8	2.5	0:55	(1.7)	(0.7)	RUN-1	(18.1)	(15.0)		LIMESTONE, boundstone, white (10YR8/1), to pale yellow (2.5Y8/2), hard, wet, indurated (Upper Fort Thompson Formation)
-31.7	30.3		3:06	68%	28%		91%	75%		27.8ft: switch sampling method to coring (<i>continued</i>)
		5.0	2:00/0.5	(4.1)	(3.4)	RUN-2				27.8ft: white (5Y8/1), to light greenish gray (5GY8/1), hard, indurated, coralline, fossiliferous, strong HCl reaction, trace to few vugs
			2:18	82%	68%					29.0ft: loss of circulation
			1:17							30.3ft: light greenish gray (5GY8/1)
			1:20							35.3ft: white (5Y8/1)
			1:11							
-36.7	35.3		1:32							
		5.0	1:36	(5.0)	(4.0)	RUN-3				
			2:01	100%	80%					
			3:05							
			2:15							
-41.7	40.3		1:55							
		5.0	2:35	(4.9)	(4.5)	RUN-4				40.3ft: white (N8/), hard to moderately hard, recrystallized calcite
			1:51	98%	90%					
			1:41							
			1:17							
-46.7	45.3		1:09							
		5.0	2:27	(5.0)	(5.0)	RUN-5				45.3 to 47.7ft: gray (N6/)
			1:46	100%	100%					
			1:57							
			1:47				(49.2)	(28.4)		
			1:41				72%	42%		LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous with few shell molds and casts, trace vugs, strong HCl reaction (Lower Fort Thompson Formation)
-51.7	50.3		1:49	(5.0)	(5.0)	RUN-6				
		5.0	2:11	100%	100%					
			1:20							
			1:09							
			0:45							
-56.7	55.3		1:28	(4.7)	(4.0)	RUN-7				
		5.0	1:44	94%	80%					
			1:18							
			1:47							
			1:32							
-61.7	60.3		1:29	(3.8)	(2.3)	RUN-8				60.3ft: indurated to friable, trace sand
		5.0	1:42	76%	46%					
			1:41							
			1:32							
			1:48							
-66.7	65.3		2:35/0.8	(0.6)	(0.0)	RUN-9				65.3ft: indurated
		0.8	1:30/0.2	75%	0%	RUN-10				66.1ft: moderately indurated
		4.2	2:35	(2.5)	(0.9)					
			2:14	60%	21%					
			1:25							
			1:20							
-71.7	70.3		0:57	(2.3)	(0.4)	RUN-11				70.3ft: trace to few sand
		5.0	1:12	46%	8%					
			1:03							
			1:05							
			0:57							
-76.7	75.3		1:13	(3.3)	(1.6)	RUN-12				75.3ft: indurated
		3.8	1:26	87%	42%					
			1:55							
			1:49/0.8							
-80.5	79.1		1:41/0.2	(1.2)	(1.1)	RUN-13				
		1.2	3:41	100%	92%	RUN-14				80.3ft: moderately indurated to indurated, little shell molds and casts
		5.0	1:33	(3.0)	(2.2)					
			0:48	60%	44%					
			0:46							
			0:34							
			1:05							
-86.7	85.3		1:06	(2.7)	(0.6)	RUN-15				
		5.0	1:19	54%	12%					
			1:33							
			0:49							
			0:43							
-91.7	90.3		0:58	(4.1)	(2.1)	RUN-16				
		5.0	0:46	82%	42%					
			0:47							
			1:23							
			0:53							
-96.7	95.3		0:57	(4.0)	(2.3)	RUN-17				95.3ft: indurated, few to little shell molds and casts
		5.0	0:36	80%	46%					
			0:39							
			0:44							
			0:49							
-101.7	100.3		1:10	(4.2)	(2.2)	RUN-18				100.3ft: hard to moderately hard, moderately indurated, little to some shell molds and casts
		5.0	1:18	84%	44%					

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 5 30 08

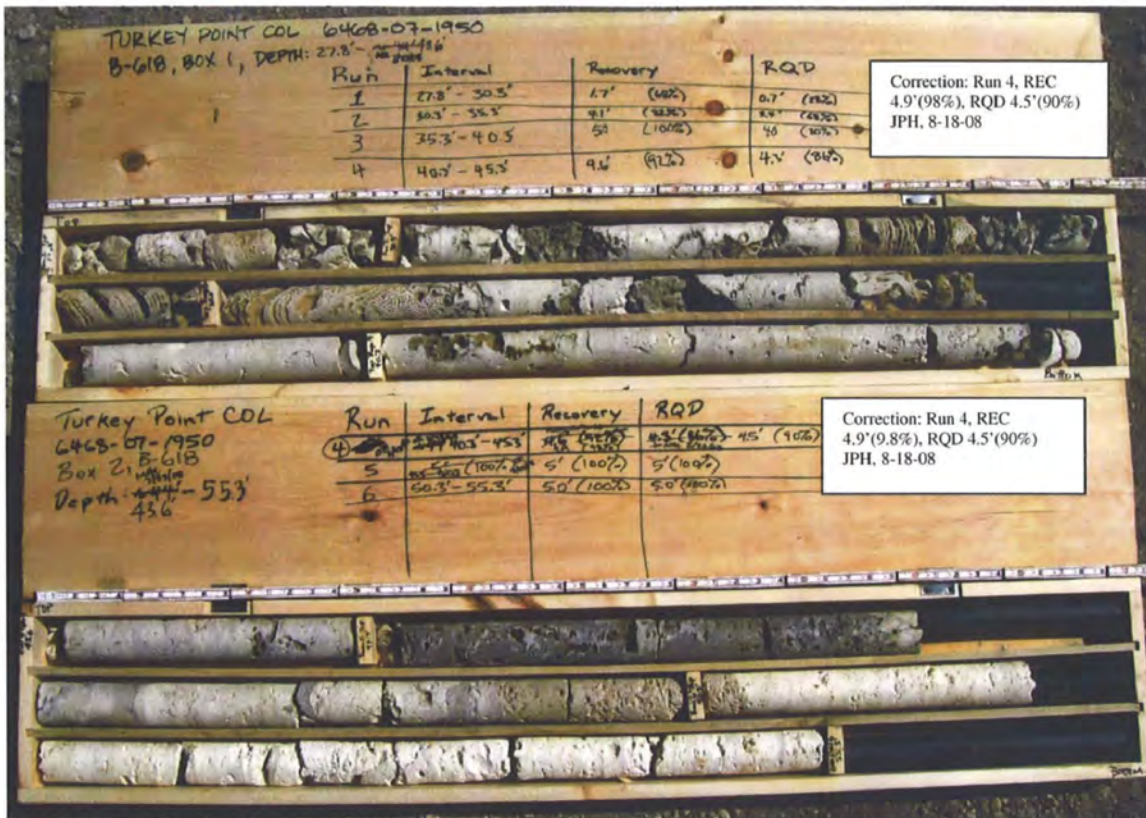


SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: O. Rodriguez
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-45C (RAL)	DRILLER: D. White/ R. Hall	GROUND WATER (ft)
BORING NO.: B-618	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,208 US ft (NAD83/90)	EASTING: 876,643 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 154.7 ft	CASING DEPTH: 4" to 28.8', 3" to 133.2'	HAMMER (ID): 140 lb. Auto (MEC-12)	
DATE STARTED: 2/22/08	COMPLETED: 3/4/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

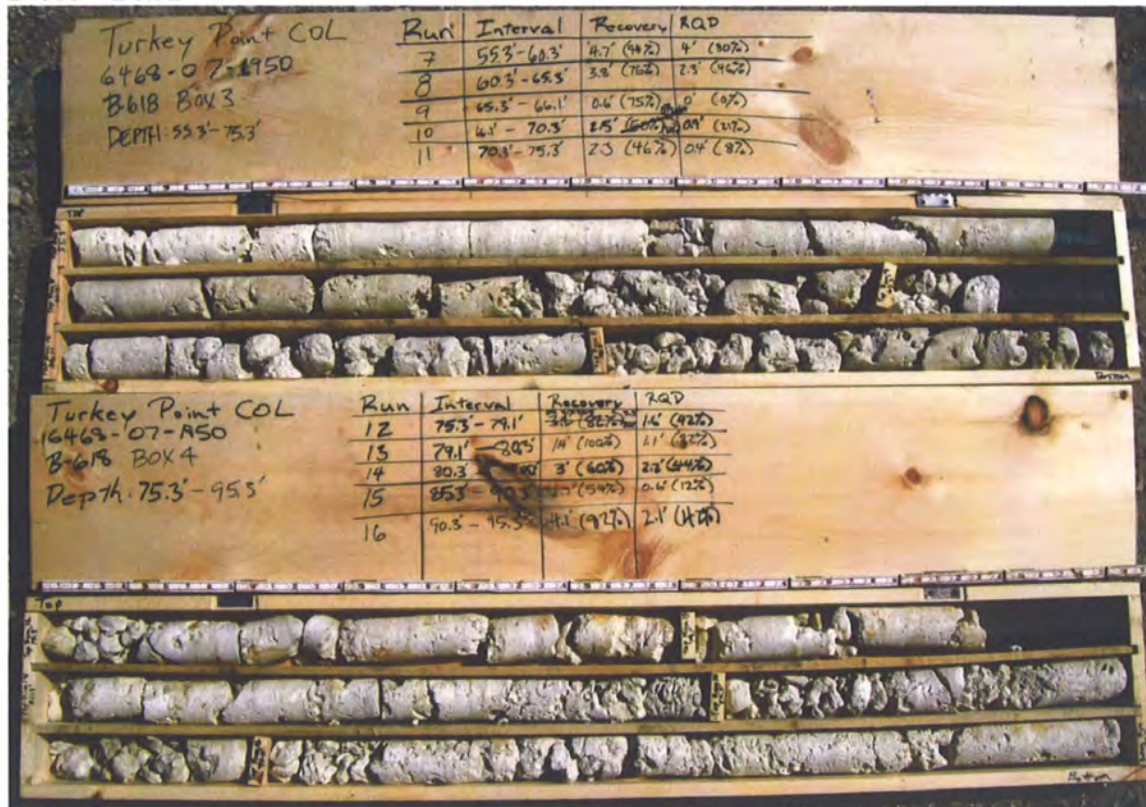
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-106.7	105.3		0:33 1:22 2:28							LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous with few shell molds and casts, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)
		5.0	1:26 1:24 0:47 1:24 2:10	(3.0) 60%	(0.7) 14%	RUN-19				
-111.7	110.3									
		5.0	0:44 1:11 0:30 1:02 0:43	(1.9) 38%	(0.4) 8%	RUN-20				110.3ft: moderately hard, friable to moderately indurated
-116.7	115.3									
		5.0	0:17 0:14 0:55 0:55 0:19	(0.3) 6%	(0.0) 0%	RUN-21	(0.0) 0%	(NA)		115.3ft: moderately indurated 116.0ft: Silty SAND (SM), light gray (2.5Y7/2), loose, wet, trace limestone fragments (Tamiami Formation)
-121.7	120.3									116.0ft: Silty SAND (SM), light gray (2.5Y7/2), loose, wet, trace limestone fragments (Tamiami Formation)
										Coring Terminated at Elevation -121.7

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



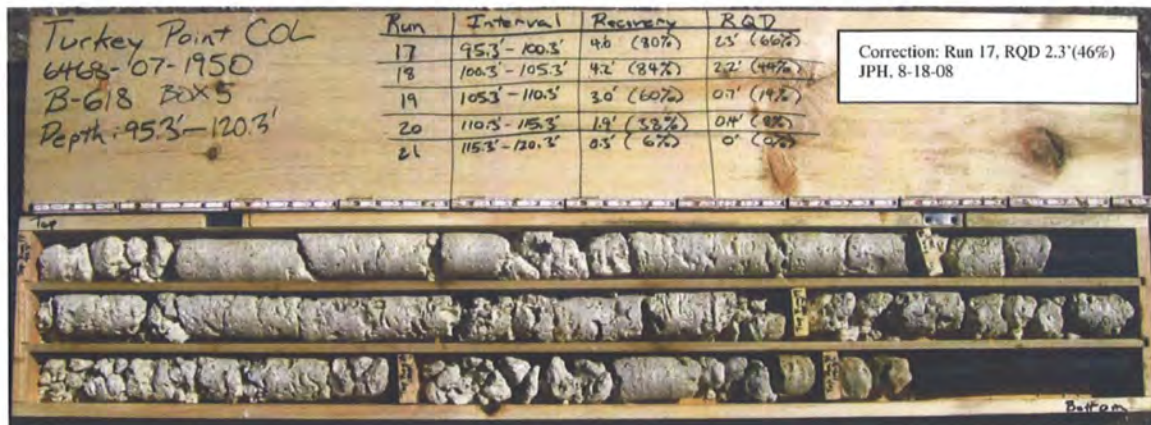
B-618 - Box 1

B-618 - Box 2



B-618 - Box 3

B-618 - Box 4



B-618 - Box 5



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade		GEOLOGIST: O. Rodriguez			
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-45C (RAL)					DRILLER: D. Rhodes/ K. Guy				GROUND WATER (ft)	
BORING NO.: B-619					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.7 ft (NAVD88)					NORTHING: 397,294 US ft (NAD83/90)					EASTING: 876,654 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 128.7 ft			BORING DIAMETER: 4" to 13.6', 3" to 128.7'					CASING DEPTH: 4" to 13.6', 3" to 118.2'				HAMMER (ID):140 lb. Auto (MEC-12)			
DATE STARTED: 3/6/08			COMPLETED: 3/9/08			CORE SIZE: HQ3				BITS USED: 2 15/16" Roller Cone					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-76.5					Continued from previous page										
-78.4	76.7										RUN-14			LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, few shell molds and casts, strong HCl reaction, few vugs (Lower Fort Thompson Formation) (continued)	
-83.3	81.6										RUN-15			76.7ft: trace to few shell molds, trace to few sand, few vugs	
-88.3	86.6										RUN-16			86.6ft: moderately hard to hard, moderately indurated to indurated	
-93.3	91.6										RUN-17			91.6ft: hard, indurated	
-98.3	96.6										RUN-18			96.6ft: moderately hard to hard, moderately indurated to indurated	
-103.3	101.6										RUN-19			101.6ft: trace sand, little shell molds and casts	
-108.3	106.6										RUN-20			106.6ft: indurated to moderately indurated, few sand, few shell molds and casts, few to little vugs	
-113.3	111.6										RUN-21			111.6ft: moderately hard, moderately indurated, few to little sand	
-118.3	116.6										RUN-22			116.7ft: Silty SAND (SM), white (2.5Y8/1), wet, and moderately hard, fine to coarse grained sand, fine gravel sized moderately indurated limestone/cemented sand fragments (Tamiami Formation)	
-123.3	121.6	8	4	3							619-8			121.6ft: Switch sampling methods to SPT	
														121.6ft: pale yellow (2.5Y8/3), loose, wet, little fines, fine grained sand, trace shell fragments	
-128.9	127.2	3	8	8							619-9			127.2ft: trace cemented sand fragments, shell fragments	
														Boring Terminated at Elevation -130.4 ft	

TURKEY POINT COL BORE TURKEY POINT COL GDT 8/18/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: O. Rodriguez
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-45C (RAL)	DRILLER: D. Rhodes/ K. Guy	GROUND WATER (ft)
BORING NO.: B-619	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.7 ft (NAVD88)	NORTHING: 397,294 US ft (NAD83/90)	EASTING: 876,654 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 128.7 ft	CASING DEPTH: 4" to 13.6', 3" to 118.2'	HAMMER (ID): 140 lb. Auto (MEC-12)	
DATE STARTED: 3/6/08	COMPLETED: 3/9/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	RQD (ft) %	SAMP. NO.	STRATA REC (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS
										Begin Coring @ 16.2 ft
-17.9	16.2	0.5	5:22/0.5	(0.5)	(0.4)	RUN-1	(1.5)	(0.4)		LIMESTONE, boundstone, gray (N6/), very soft, wet, friable, trace to few coarse to fine grained sand, oolitic (Miami Formation) (continued)
-18.4	16.7	5.0	0.44 0.55 1:18 0.45 0.50	100% (1.0) 20%	80% (0.0) 0%	RUN-2	17%	5%		16.2ft: (2.5Y8/1), moderately hard, indurated, oolitic, strong HCl reaction
-23.4	21.7	5.0	0.24 0.34 0.28 2.28 0.58	(1.7) 34%	(0.7) 14%	RUN-3				16.7ft: soft to moderately hard, friable to indurated, fossiliferous, few vugs
-28.4	26.7	5.0	1.47 1.25 0.50 0.51 1.34	(5.0) 100%	(4.5) 90%	RUN-4 619-CS-01	(22.8) 98%	(18.2) 78%		-26.7 25.0 LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, coralline, strong HCl reaction, few vugs (Upper Fort Thompson Formation) 25.0 to 30.0ft: loss of circulation
-33.4	31.7	5.0	1.37 1.00 0.51 0.48 0.48	(5.0) 100%	(3.5) 70%	RUN-5				
-38.4	36.7	5.0	1.06 0.53 1.03 1:59 2:09	(5.0) 100%	(3.8) 76%	RUN-6				
-43.4	41.7	5.0	1:56 0:20 1:59 1:38 1:13	(4.6) 92%	(4.2) 84%	RUN-7				41.7ft: white (2.5Y8/1), to 45.7ft then bluish gray (5PB5/1)
-48.4	46.7	5.0	1:38 0:50 1:01 1:09 0:59	(5.0) 100%	(5.0) 100%	RUN-8 619-CS-02	(40.9) 61%	(19.5) 29%		-49.9 48.2 46.7 to 48.2ft: bluish gray (5PB6/1) LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, few shell molds and casts, strong HCl reaction, few vugs (Lower Fort Thompson Formation) 51.7ft: trace sand and shell molds
-53.4	51.7	5.0	0.47 0.42 0.29 0.33 0.20	(3.0) 60%	(1.8) 36%	RUN-9				
-58.4	56.7	5.0	1.00 1.00 0:59 1:04 0:57	(3.6) 72%	(2.3) 46%	RUN-10				
-63.4	61.7	5.0	1.20 0:50 0:54 0.30 0:26	(1.9) 38%	(0.0) 0%	RUN-11				
-68.4	66.7	5.0	1:06 0:38 0:41 0:08 1:23	(2.8) 56%	(1.6) 32%	RUN-12				
-73.4	71.7	5.0	1:32 1:25 1:16 0.39 0:54	(3.2) 64%	(1.3) 26%	RUN-13				71.7ft: few shell molds
-78.4	76.7	4.9	1:23 1:14 1:03 1:17 1:16/0.9	(3.7) 76%	(1.5) 31%	RUN-14				76.7ft: trace to few shell molds, trace to few sand, few vugs
-83.3	81.6	5.0	1:10 0:46 0:56 0.32 0:34	(3.3) 66%	(1.2) 24%	RUN-15				
-88.3	86.6	5.0	0.41 0.45 1:01 2:08	(1.5) 30%	(0.0) 0%	RUN-16				86.6ft: moderately hard to hard, moderately indurated to indurated

TURKEY POINT COL CORE TURKEY POINT GP TURKEY POINT COL GDT 8/18/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: O. Rodriguez
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-45C (RAL)	DRILLER: D. Rhodes/ K. Guy	GROUND WATER (ft)
BORING NO.: B-619	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.7 ft (NAVD88)	NORTHING: 397,294 US ft (NAD83/90)	EASTING: 876,654 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 128.7 ft	CASING DEPTH: 4" to 13.6', 3" to 118.2'	HAMMER (ID): 140 lb. Auto (MEC-12)	
DATE STARTED: 3/6/08	COMPLETED: 3/9/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	RQD (ft) %	SAMP. NO.	REC. (ft) %	RQD (ft) %	LOG	DESCRIPTION AND REMARKS
										Continued from previous page
-93.3	91.6	5.0	1.21 1.51 2.14 0.50 1.40 1.20	(2.8) 56%	(2.0) 40%	RUN-17				LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, few shell molds and casts, strong HCl reaction, few vugs (Lower Fort Thompson Formation) (continued) 91.6ft: hard, indurated
-98.3	96.6	5.0	1.52 0.47 0.44 0.42 2.50 1.80	(2.1) 42%	(1.3) 26%	RUN-18				96.6ft: moderately hard to hard, moderately indurated to indurated
-103.3	101.6	5.0	1.00 1.12 0.52 0.47 2.14	(4.2) 84%	(1.9) 38%	RUN-19				101.6ft: trace sand, little shell molds and casts
-108.3	106.6	5.0	0.56 0.59 1.02 1.10 2.31	(3.3) 66%	(1.1) 22%	RUN-20				106.6ft: indurated to moderately indurated, few sand, few shell molds and casts, few to little vugs
-113.3	111.6	5.0	1.09 1.27 1.57 1.53 1.01	(2.0) 40%	(0.0) 0%	RUN-21				111.6ft: moderately hard, moderately indurated, few to little sand
-118.3	116.6	5.0	0.49 0.26 0.32 0.46 1.14	(1.2) 24%	(0.0) 0%	RUN-22	(1.2) 18%	(NA)	-116.7	Silty SAND (SM), white (2.5Y8/1), wet, and moderately hard, fine to coarse grained sand, fine gravel sized moderately indurated limestone/cemented sand fragments (Tamiami Formation)
-123.3	121.6								-123.3	121.6 Coring Terminated at Elevation -123.3

TURKEY POINT COL CORE TURKEY POINT GP TURKEY POINT COL GDT 8/18/08



B-619 - Box 1



B-619 - Box 2



B-619 - Box 3



B-619 - Box 4



B-619 - Box 5



BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade				GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)			
BORING NO.: B-620(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA			
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 397,395 US ft (NAD83/90)				EASTING: 876,648 US ft (NAD83/90)				24 HR. NA			
TOTAL DEPTH: 215.0 ft				BORING DIAMETER: 4" to 215.0'				CASING DEPTH: 4" to 105.5'				HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 3/18/08				COMPLETED: 3/23/08				CORE SIZE: HQ3				BITS USED: 3 7/8" Tricone			
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT						SAMP.	LOG	SOIL AND ROCK DESCRIPTION		
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO.				
-1.5					Ground Surface										
-1.5	0.0	WOH	WOH	WOH	•0						620(DH)-1	-1.5	0.0	MUCK, light gray (2.5Y7/2), to grayish brown (2.5Y5/2), very soft, wet, strong HCl reaction, mostly organics	
-4.0	2.5										620(DH)-2	-4.5	3.0		
-6.5	5.0	3	9	12	•21						620(DH)-3			LIMESTONE, boundstone, pale yellow (5Y8/2), soft, wet, friable, strong HCl reaction, oolitic (Miami Formation)	
-9.0	7.5	10	9	8	•17						620(DH)-4			5.0ft: very soft, fossiliferous	
-11.5	10.0	8	6	5	•11						620(DH)-5			10.0ft: medium hard, moderately indurated	
-13.9	12.4	7	11	21	•32						620(DH)-6			12.4ft: soft	
-16.4	14.9	17	20	10	•30						620(DH)-7			14.9ft: moderately hard	
-21.0	19.5	14	16	31	•47										
											620(DH)-8			19.5ft: very soft	
		13	7	7	•14										
-26.0	24.5										620(DH)-9	-25.5	24.0	LIMESTONE, boundstone, pale yellow (5Y8/2), hard, wet, strong HCl reaction (Upper Fort Thompson Formation)	
-27.0	25.5	50/0.4									RUN-1			25.5ft: Switch sampling method to coring	
														25.5ft: white (5Y8/1), hard, indurated, fossiliferous, strong HCl reaction, sandy zones	
-32.0	30.5										RUN-2			26.0ft: loss of circulation	
														30.5ft: medium hard, moderately indurated, recrystallized calcite, few vugs	
-37.0	35.5										RUN-3			35.5ft: moderately hard, coralline	
-42.0	40.5										RUN-4			40.5ft: hard, indurated	
											620DH-CS-02				
-47.0	45.5										RUN-5			45.5 to 47.7ft: light bluish gray (5PB7/1), locally interconnected vugs and filled with recrystallized calcite, horizontal bedding plane at 47.7ft	
-52.0	50.5											-49.2	47.7		
											RUN-6			LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, few gastropod shell molds and casts, vertical fractures filled with calcite and cemented sand, strong HCl reaction, horizontal bedding planes at 48.7ft and 49.0ft (Lower Fort Thompson Formation)	
-57.0	55.5										620DH-CS-03			50.5ft: trace vugs, porous	
											RUN-7			55.5ft: trace sand, bedding planes at 56.1ft and 57.7ft	
-62.0	60.5														
											RUN-8				
-67.0	65.5										620DH-CS-04				
											RUN-9			65.5ft: soft to moderately hard, friable to indurated	
-72.0	70.5													65.7 to 83.0ft: thin sand interbeds	
											RUN-10				

TURKEY POINT COL BORE TURKEY POINT COL GDT 8/19/08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark					
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)			
BORING NO.: B-620(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA			
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 397,395 US ft (NAD83/90)				EASTING: 876,648 US ft (NAD83/90)				24 HR. NA			
TOTAL DEPTH: 215.0 ft				BORING DIAMETER: 4" to 215.0'				CASING DEPTH: 4" to 105.5'				HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 3/18/08				COMPLETED: 3/23/08				CORE SIZE: HQ3				BITS USED: 3 7/8" Tricone			
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT						SAMP.	LOG	SOIL AND ROCK DESCRIPTION		
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO.			MOI	
-76.3					Continued from previous page										
-77.0	75.5														LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, few gastropod shell molds and casts, vertical fractures filled with calcite and cemented sand, strong HCl reaction, horizontal bedding planes at 48.7ft and 49.0ft (Lower Fort Thompson Formation) (continued)
-82.0	80.5														75.5ft: hard, indurated
-87.0	85.5														80.5ft: soft to hard, friable to indurated
-92.0	90.5														Silty SAND (SM), white (5Y8/1), wet, fine grained sand, strong HCl reaction
-97.0	95.5														LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, strong HCl reaction, sandy zones, few vugs
-102.0	100.5														90.5ft: medium hard to hard, friable to indurated
-107.0	105.5														95.5ft: hard, indurated
-112.0	110.5														100.5ft: little vugs
-117.0	115.5														110.5ft: hard to soft, indurated to friable
-122.0	120.5	15	15	36											GRAVEL with sand (GM), pale yellow (5Y8/3), very dense, wet, fine to coarse grained sand, fine to coarse gravel, strong HCl reaction, trace shell fragments, cemented sand fragments (Tamiami Formation)
															120.5ft: switch sampling method to SPT
-131.5	130.0	3	5	6											Silty SAND (SM), light greenish gray (10Y7/1), medium dense, wet, strong HCl reaction, fine grained sand
-140.0	138.5	5	3	6											138.5ft: loose
-150.0	148.5	5	8	12											148.5ft: light olive gray (5Y6/2), medium dense

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 8/19/08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: R. Clark									
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-750 (Miller)		DRILLER: G.Bilbrey/P.McKorkle/J.Tucker		GROUND WATER (ft)									
BORING NO.: B-620(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA									
GROUND ELEV.: -1.5 ft (NAVD88)		NORTHING: 397,395 US ft (NAD83/90)		EASTING: 876,648 US ft (NAD83/90)		24 HR. NA									
TOTAL DEPTH: 215.0 ft		BORING DIAMETER: 4" to 215.0'		CASING DEPTH: 4" to 105.5'		HAMMER (ID): 140 lb. Auto (07)									
DATE STARTED: 3/18/08		COMPLETED: 3/23/08		CORE SIZE: HQ3		BITS USED: 3 7/8" Tricone									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-151.1					Continued from previous page										
-160.0	158.5	3	4	8						12			Silty SAND (SM), light greenish gray (10Y7/1), medium dense, wet, strong HCl reaction, fine grained sand (continued)		
-170.0	168.5	7	8	10						18			158.5ft: olive gray (5Y5/2)		
-180.0	178.5	3	4	6						10			178.5ft: loose		
-190.0	188.5	4	3	9						12			188.5ft: medium dense		
-200.0	198.5	5	6	9						15			198.5ft: trace limestone fragments		
-215.0	213.5	4	5	8						13					
													Boring Terminated at Elevation -216.5 ft		

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 8/19/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)	
BORING NO.: B-620(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 397,395 US ft (NAD83/90)				EASTING: 876,648		US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 215.0 ft				CASING DEPTH: 4" to 105.5'						HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 3/18/08		COMPLETED: 3/23/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
												Begin Coring @ 25.5 ft	
-27.0	25.5	5.0	1:38 2:55 3:04 4:12 4:33	(5.0) 100%	(4.5) 90%		RUN-1	(20.7) 93%	(18.2) 82%			LIMESTONE, boundstone, pale yellow (5Y8/2), hard, wet, strong HCl reaction (Upper Fort Thompson Formation) (continued) 25.5ft: white (5Y8/1), hard, indurated, fossiliferous, strong HCl reaction, sandy zones	
-32.0	30.5	5.0	2:25 2:01 1:55 1:38 1:23	(3.7) 74%	(1.7) 34%		RUN-2					26.0ft: loss of circulation 30.5ft: medium hard, moderately indurated, recrystallized calcite, few vugs	
-37.0	35.5	5.0	1:49 2:18 1:53 2:21 2:22	(4.8) 96%	(4.8) 96%		RUN-3					35.5ft: moderately hard, coralline	
-42.0	40.5	5.0	2:57 2:55 2:59 3:43 3:30	(5.0) 100%	(5.0) 100%		RUN-4 620DH- CS-02					40.5ft: hard, indurated	
-47.0	45.5	5.0	2:25 2:33 2:25 2:31 2:02	(5.0) 100%	(5.0) 100%		RUN-5					45.5 to 47.7ft: light bluish gray (5PB7/1), locally interconnected vugs and filled with recrystallized calcite, horizontal bedding plane at 47.7ft	
-52.0	50.5	5.0	1:57 2:55 0:55 0:22 0:25	(4.5) 90%	(3.6) 72%		RUN-6 620DH- CS-03	(28.7) 81%	(19.5) 55%			47.7 LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, few gastropod shell molds and casts, vertical fractures filled with calcite and cemented sand, strong HCl reaction, horizontal bedding planes at 48.7ft and 49.0ft (Lower Fort Thompson Formation) 50.5ft: trace vugs, porous	
-57.0	55.5	5.0	0:20 0:40 0:44 0:44 0:45	(3.6) 72%	(2.5) 50%		RUN-7					55.5ft: trace sand, bedding planes at 56.1ft and 57.7ft	
-62.0	60.5	5.0	1:45 1:48 1:32 0:58 1:22	(4.1) 82%	(3.4) 68%		RUN-8 620DH- CS-04						
-67.0	65.5	5.0	2:30 2:22 2:41 2:23 2:01	(3.4) 68%	(2.0) 40%		RUN-9					65.5ft: soft to moderately hard, friable to indurated 65.7 to 83.0ft: thin sand interbeds	
-72.0	70.5	5.0	1:53 1:35 1:50 1:05 1:33	(3.1) 62%	(0.6) 12%		RUN-10						
-77.0	75.5	5.0	0:55 2:01 2:12 1:55 2:23	(4.7) 94%	(2.9) 58%		RUN-11					75.5ft: hard, indurated 80.5ft: soft to hard, friable to indurated	
-82.0	80.5	5.0	2:01 1:12 1:28 2:48 2:06	(3.3) 66%	(1.7) 34%		RUN-12						
-87.0	85.5	5.0	0:41 1:14 1:52 1:47 1:49	(5.0) 100%	(4.0) 80%		RUN-13	(2.8) 62%	(NA)			84.5 Silty SAND (SM), white (5Y8/1), wet, fine grained sand, strong HCl reaction	
-92.0	90.5	5.0	0:30 1:39 2:01 1:08 1:21	(4.1) 82%	(2.7) 54%		RUN-14	(21.3) 76%	(15.7) 56%			89.0 LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, strong HCl reaction, sandy zones, few vugs 90.5ft: medium hard to hard, friable to indurated	
-97.0	95.5	5.0	0:37 0:20 0:31 0:56 1:03	(2.7) 54%	(1.2) 24%		RUN-15					95.5ft: hard, indurated	
-102.0	100.5												

TURKEY POINT COL CORE TURKEY POINT GPT TURKEY POINT COL GDT 8/19/08

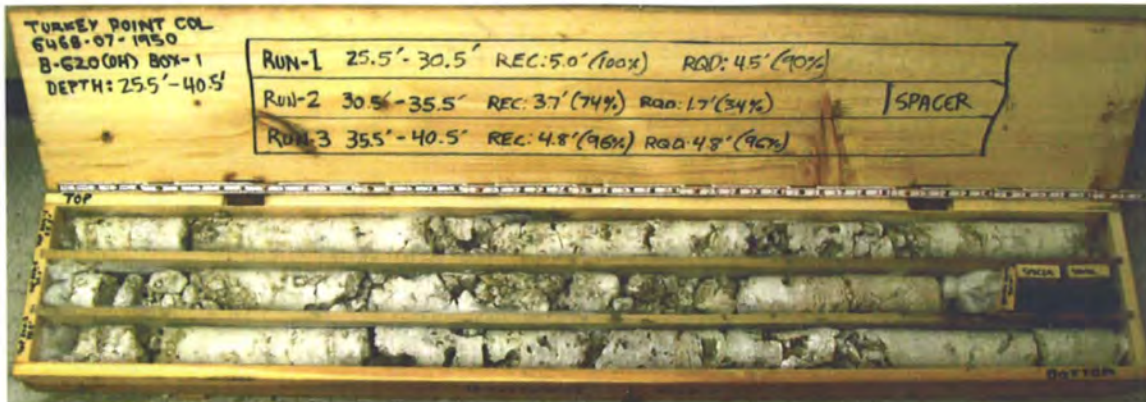


SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Billbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-620(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 397,395 US ft (NAD83/90)	EASTING: 876,648 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 215.0 ft	CASING DEPTH: 4" to 105.5'	HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 3/18/08	COMPLETED: 3/23/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Continued from previous page
-107.0	105.5	5.0	0:36 0:49 0:38 0:44 0:45	(4.0) 80%	(3.3) 66%	RUN-16				LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, strong HCl reaction, sandy zones, few vugs (<i>continued</i>) 100.5ft: little vugs
-112.0	110.5	5.0	1:06 0:59 0:36 1:08 0:43	(4.7) 94%	(3.8) 76%	RUN-17				
-117.0	115.5	5.0	0:40 0:05 1:57 1:10 1:23	(2.8) 56%	(1.7) 34%	RUN-18				110.5ft: hard to soft, indurated to friable
-122.0	120.5	5.0	0:33 0:53 0:45 0:42 1:14	(1.5) 30%	(0.0) 0%	RUN-19				GRAVEL with sand (GM), pale yellow (5Y8/3), very dense, wet, fine to coarse grained sand, fine to coarse gravel, strong HCl reaction, trace shell fragments, cemented sand fragments (Tamiami Formation)
										Coring Terminated at Elevation -122.0

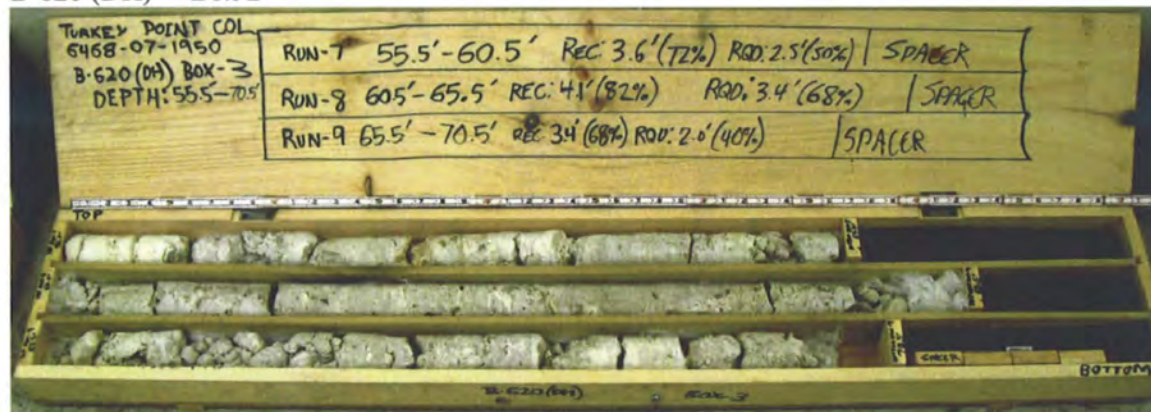
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/19/08



B-620 (DH) – Box 1



B-620 (DH) – Box 2



B-620 (DH) – Box 3



B-620 (DH) – Box 4



B-620 (DH) - Box 5



B-620 (DH) - Box 6



GEOTECHNICAL BORING LOG

Prepared By 2274 Date 5-30-08
Checked By PM Date 5-30-08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: G. Pillappa				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-55 LC (RAL)			DRILLER: R. Banks / J. Rosser			GROUND WATER (ft)				
BORING NO.: B-621			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: 0.2 ft (NAVD88)			NORTHING: 397,368 US ft (NAD83/90)			EASTING: 876,949 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 126.5 ft			BORING DIAMETER: 4" to 27.9', 3" to 126.5'			CASING DEPTH: 4" to 27.9', 3" to 115.3'			HAMMER (ID): 140 lb. Auto (MEC-02)				
DATE STARTED: 4/3/08			COMPLETED: 4/4/08			CORE SIZE: HQ3			BITS USED: 2 7/8" Tricone				
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
0.2					Ground Surface								0.2
0.2	0.0	1	1	WOH							621-1		MUCK, very dark gray (10Yr3/1), very soft, dry, mostly organic, strong HCl reaction
-2.6	2.8	1		WOH							621-2		
-4.9	5.1	1	2	9							621-3		Field notes do not indicate that sample 621-3 was split into separate jars
-7.3	7.5	5	5	6							621-4		LIMESTONE, boundstone, white (10YR8/1), very soft, wet, strong HCl reaction, oolitic (Miami Formation)
-9.6	9.8	11	12	7							621-5		
-11.8	12.0	11	16	17							621-6		12.0ft: medium hard
-14.3	14.5	6	9	13							621-7		14.5ft: soft, fossiliferous
-18.3	18.5	7	6	3							621-8		18.5ft: very soft
-23.3	23.5	3	4	2							621-9		
-28.3	28.5	50/0.5									621-10		LIMESTONE, boundstone, white (10YR8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation)
-28.8	29.0										RUN-1		29.0ft: Switch sampling method to coring
-30.1	30.3										RUN-2		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few vugs
-35.1	35.3										RUN-3		30.3ft: coralline
-40.1	40.3										RUN-4		
-45.1	45.3										621-CS-01		45.3 to 48.3ft: light gray (10YR7/1), trace recrystallized calcite
-50.1	50.3										RUN-5		
-55.1	55.3										RUN-6		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, trace shells, few vugs, strong HCl reaction (Lower Fort Thompson Formation)
-60.1	60.3										RUN-7		50.3ft: trace shell molds, trace fine sand
-65.1	65.3										RUN-8		
-70.1	70.3										RUN-9		60.3ft: trace to few shell molds
											RUN-10		65.3ft: sandy
													70.3ft: few to little shell molds and casts

TURKEY POINT COL BORE TURKEY POINT GP TURKEY POINT COL GDT 5/30/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: G. Pillappa	
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-55 LC (RAL)		DRILLER: R. Banks/ J. Rosser		GROUND WATER (ft)	
BORING NO.: B-621		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: 0.2 ft (NAVD88)		NORTHING: 397,368 US ft (NAD83/90)		EASTING: 876,949 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 126.5 ft		BORING DIAMETER: 4" to 27.9', 3" to 126.5'		CASING DEPTH: 4" to 27.9', 3" to 115.3'		HAMMER (ID): 140 lb. Auto (MEC-02)	
DATE STARTED: 4/3/08		COMPLETED: 4/4/08		CORE SIZE: HQ3		BITS USED: 2 7/8" Tricone	

ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-74.6					Continued from previous page										
-75.1	75.3														LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, trace shells, few vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-80.1	80.3														75.3 to 80.3ft: possible thin interbeds of sand and friable limestone
-85.1	85.3														80.3ft: trace to few shell molds and casts, few vugs
-90.1	90.3														
-95.1	95.3														95.3ft: moderately hard to hard, moderately indurated to indurated, sandy
-100.1	100.3														
-105.1	105.3														105.3ft: hard, indurated
-110.1	110.3														110.3ft: pale yellow (5Y8/2), to greenish gray (5GY6/1)
-115.1	115.3	3	5	12											POORLY GRADED SAND with silt (SP-SM), greenish gray (5GY6/1), medium dense, moist, fine to medium grained sand, strong HCl reaction, trace shell fragments, little fines (Tamiami Formation)
															115.3ft: Switch sampling method to SPT
-124.8	125.0	7	14	11											Silty SAND (SM), greenish gray (5GY6/1), medium dense, moist, fine to medium grained sand, strong HCl reaction, trace shell fragments, little fines
															Boring Terminated at Elevation -126.3 ft

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: G. Pillappa		
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-55 LC (RAL)				DRILLER: R. Banks/ J. Rosser			GROUND WATER (ft)	
BORING NO.: B-621				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core			0 HR.	NA
GROUND ELEV.: 0.2 ft		(NAVD88)		NORTHING: 397,368 US ft (NAD83/90)				EASTING: 876,949 US ft (NAD83/90)		24 HR.	NA	
TOTAL DEPTH: 126.5 ft				CASING DEPTH: 4" to 27.9', 3" to 115.3'						HAMMER (ID): 140 lb. Auto (MEC-02)		
DATE STARTED: 4/3/08		COMPLETED: 4/4/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)						
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS
												Begin Coring @ 29.0 ft
-28.8	29.0	1.3	0.45	(1.2)	(0.6)		RUN-1	(19.1)	(13.5)			LIMESTONE, boundstone, white (10YR8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation) (continued) LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few vugs 30.3ft: coralline
-30.1	30.3	5.0	0.18/0.3	92%	46%		RUN-2	99%	70%			
			0.39	(4.9)	(3.2)							
			0.34	98%	64%							
			0.26									
			0.26									
-35.1	35.3	5.0	0.29	(5.0)	(3.3)		RUN-3					
			0.20	100%	66%							
			0.23									
			0.22									
			0.20									
			0.25									
-40.1	40.3	5.0	0.23	(5.0)	(4.2)		RUN-4					
			0.26	100%	84%							
			0.22									
			0.28									
-45.1	45.3	5.0	0.39	(4.5)	(3.7)		RUN-5					45.3 to 48.3ft: light gray (10YR7/1), trace recrystallized calcite
			0.43	90%	74%							
			0.33									
			0.41									
			0.41									
-50.1	50.3	5.0	0.39	(4.3)	(4.0)		RUN-6	(40.6)	(23.7)			LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, trace shells, few vugs, strong HCl reaction (Lower Fort Thompson Formation) 50.3ft: trace shell molds, trace fine sand
			1.01	86%	80%			61%	36%			
			0.59									
			0.43									
			0.35									
-55.1	55.3	5.0	0.40	(0.5)	(0.0)		RUN-7					
			1.01	10%	0%							
			0.40									
			1.12									
			1.25									
-60.1	60.3	5.0	0.44	(4.1)	(1.6)		RUN-8					60.3ft: trace to few shell molds
			0.38	82%	32%							
			0.36									
			0.30									
			0.27									
-65.1	65.3	5.0	0.28	(1.3)	(0.0)		RUN-9					65.3ft: sandy
			0.24	26%	0%							
			0.15									
			0.16									
			0.19									
-70.1	70.3	5.0	0.26	(2.6)	(1.6)		RUN-10					70.3ft: few to little shell molds and casts
			0.18	52%	32%							
			0.24									
			0.39									
			0.24									
			0.37	(0.5)	(0.0)		RUN-11					75.3 to 80.3ft: possible thin interbeds of sand and friable limestone
			0.32	10%	0%							
			0.22									
			0.11									
			0.13									
-80.1	80.3	5.0	0.37	(3.1)	(1.7)		RUN-12					80.3ft: trace to few shell molds and casts, few vugs
			0.24	62%	34%							
			0.18									
			0.11									
			0.22									
			0.23	(4.6)	(2.2)		RUN-13					
			0.24	92%	44%							
			0.38									
			0.36									
			0.40									
-90.1	90.3	5.0	0.37	(4.1)	(1.9)		RUN-14					
			0.48	82%	38%							
			0.38									
			0.19									
			0.25									
			0.34	(2.9)	(2.1)		RUN-15					95.3ft: moderately hard to hard, moderately indurated to indurated, sandy
			0.41	58%	42%							
			0.30									
			0.24									
			0.21									
			0.18	(2.2)	(0.0)		RUN-16					
-100.1	100.3	5.0	0.19	44%	0%							
			0.24									
			0.26									

TURKEY POINT COL CORE TURKEY POINT GPI TURKEY POINT COL CDT 5.30.08



SHEET 2 OF 2

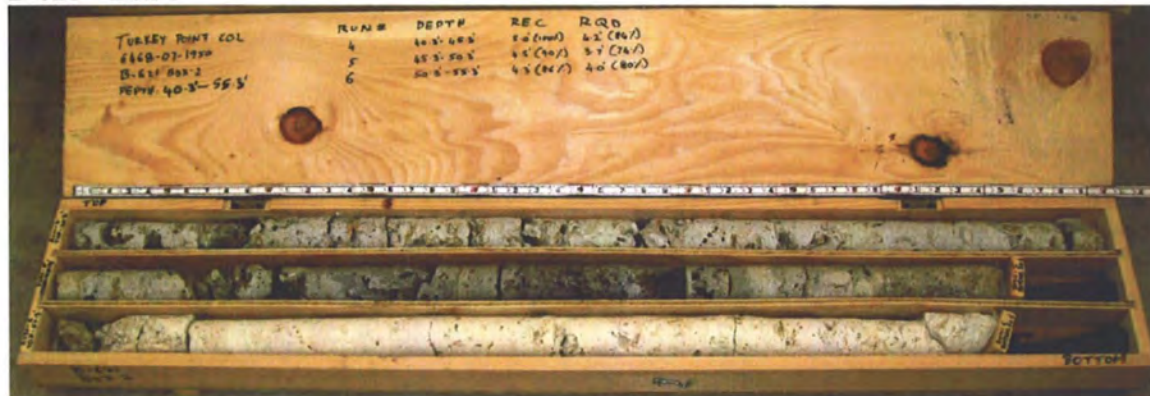
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: G. Pillappa
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 LC (RAL)	DRILLER: R. Banks/ J. Rosser	GROUND WATER (ft)
BORING NO.: B-621	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: 0.2 ft (NAVD88)	NORTHING: 397,368 US ft (NAD83/90)	EASTING: 876,949 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 126.5 ft	CASING DEPTH: 4" to 27.9', 3" to 115.3'	HAMMER (ID): 140 lb. Auto (MEC-02)	
DATE STARTED: 4/3/08	COMPLETED: 4/4/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC. (ft) %	ROD (ft) %		REC. (ft) %	ROD (ft) %		
										Continued from previous page
-105.1	105.3	5.0	0:34 0:31	(4.9) 98%	(4.6) 92%	RUN-17 621-CS-04				LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, trace shells, few vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued) 105.3ft. hard, indurated
-110.1	110.3	5.0	0:25 0:24 0:21 0:20 0:19	(4.0) 80%	(2.5) 50%	RUN-18				110.3ft: pale yellow (5Y8/2), to greenish gray (5GY6/1)
-115.1	115.3		0:26 0:23 0:29 0:19 0:21				(0.0) 0%	(NA)		POORLY GRADED SAND with silt (SP-SM), greenish gray (5GY6/1), medium dense, moist, fine to medium grained sand, strong HCl reaction, trace shell fragments, little fines (Tamiami Formation) Coring Terminated at Elevation -115.5

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDI 5/30/08



B-621 - Box 1



B-621 - Box 2



B-621 - Box 3



B-621 - Box 4



B-621 - Box 5



GEOTECHNICAL BORING LOG

Prepared By QPR Date 8-14-08Checked By SL Date 8/19/08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: G. Pillappa						
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-55 LC (RAL)				DRILLER: R. Banks/ J. Rosser				GROUND WATER (ft)				
BORING NO.: B-622				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA				
GROUND ELEV.: 0.2 ft (NAVD88)				NORTHING: 397,421 US ft (NAD83/90)				EASTING: 876,811 US ft (NAD83/90)				24 HR. NA				
TOTAL DEPTH: 100.2 ft		BORING DIAMETER: 4" to 28.9', 3" to 100.2'				CASING DEPTH: 4" to 28.9'				HAMMER (ID): 140 lb. Auto (MEC-02)						
DATE STARTED: 4/4/08		COMPLETED: 4/6/08		CORE SIZE: HQ3		BITS USED: 2 7/8" Tricone										
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100						
0.2					Ground Surface											
0.2	0.0	WOH	1	WOH	1						622-1		0.2		0.0	MUCK, light brownish gray (10YR6/3), to very dark gray (10YR3/1), very soft, moist, mostly organic, strong HCl reaction
-2.3	2.5	WOH	WOH	WOH	0						622-2					
-4.9	5.1										622-3		-5.4		5.6	Field notes do not indicated that sample 622-3 was split into separated jars
-7.1	7.3	3	12	18							622-4					LIMESTONE, boundstone, white (10YR8/1), soft, wet, strong HCl reaction, oolitic (Miami Formation)
-9.8	10.0	7	7	9							622-5					7.3ft: very soft
-12.3	12.5	5	7	8							622-6					12.5ft: medium hard, fossiliferous
-14.5	14.7	22	21	18							622-7					14.7ft: soft
-18.3	18.5	7	12	16							622-8					18.5ft: moderately hard
-23.3	23.5	3	12	43							622-9					23.5ft: medium hard
-28.3	28.5										622-10		-25.8		26.0	LIMESTONE, boundstone, white (10YR8/1), hard, wet, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation)
-29.0	29.2	7	50/0.1								RUN-1					29.2ft: Switch sampling method to coring
-30.0	30.2										RUN-2					29.2ft: white (10YR8/1), hard, indurated, trace coralline, strong HCl reaction, few vugs
-35.0	35.2										RUN-3					
-40.0	40.2										RUN-4					40.2ft: recrystallized calcite
-45.0	45.2										RUN-5					45.2ft: white (10YR8/1) to 46.5ft then light gray (10YR7/1) to 47.8ft
-50.0	50.2										RUN-6		-47.6		47.8	LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, trace to few gastropod shell molds and casts, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)
-55.0	55.2										RUN-7					55.2ft: moderately hard to hard, moderately indurated to indurated, few shell molds and casts
-60.0	60.2										RUN-8					60.2ft: hard, indurated
-65.0	65.2										RUN-9					
-70.0	70.2										RUN-10					

TURKEY POINT COL BORE: TURKEY POINT GPJ TURKEY POINT COL GDT: 8/14/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: G. Pillappa						
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-55 LC (RAL)			DRILLER: R. Banks/ J. Rosser			GROUND WATER (ft)						
BORING NO.: B-622			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA						
GROUND ELEV.: 0.2 ft (NAVD88)			NORTHING: 397,421 US ft (NAD83/90)			EASTING: 876,811 US ft (NAD83/90)			24 HR. NA						
TOTAL DEPTH: 100.2 ft			BORING DIAMETER: 4" to 28.9", 3" to 100.2'			CASING DEPTH: 4" to 28.9'			HAMMER (ID): 140 lb. Auto (MEC-02)						
DATE STARTED: 4/4/08			COMPLETED: 4/6/08			CORE SIZE: HQ3			BITS USED: 2 7/8" Tricone						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-74.6					Continued from previous page										
-75.0	75.2										RUN-11		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, trace to few gastropod shell molds and casts, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued) 75.2ft: moderately hard to hard, moderately indurated 80.2ft: moderately hard, moderately indurated 85.2ft: trace fine grained sand 90.2ft: hard, indurated, few to little shell molds and casts 95.2ft: moderately hard to hard, moderately indurated, trace shell molds and casts		
-80.0	80.2										RUN-12				
-85.0	85.2										RUN-13				
-90.0	90.2										RUN-14				
-95.0	95.2										RUN-15				
													-100.0	100.2	Boring Terminated at Elevation -100.0 ft

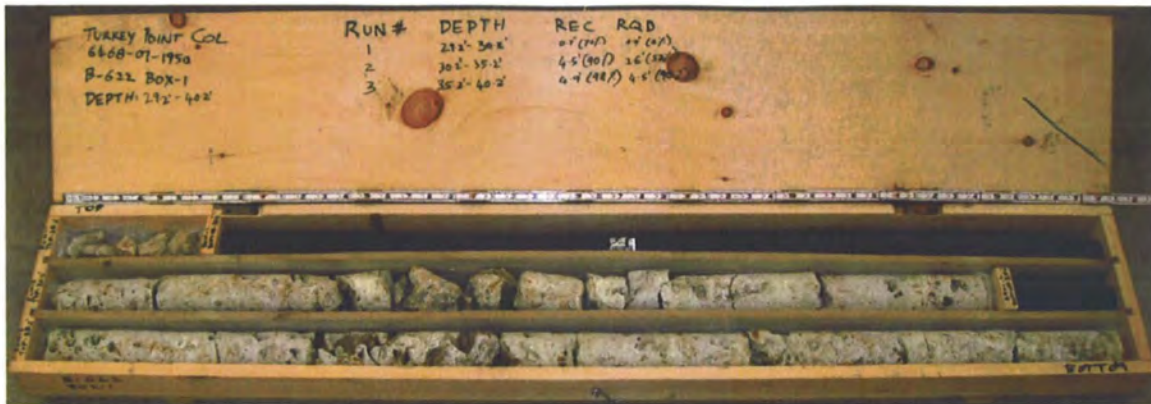
TURKEY POINT COL BORE TURKEY POINT GPI TURKEY POINT COL GDI 8/14/08



SHEET 1 OF 1

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: G. Pillappa			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-55 LC (RAL)				DRILLER: R. Banks/ J. Rosser				GROUND WATER (ft)	
BORING NO.: B-622				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: 0.2 ft (NAVD88)				NORTHING: 397,421 US ft (NAD83/90)				EASTING: 876,811 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 100.2 ft				CASING DEPTH: 4" to 28.9'						HAMMER (ID): 140 lb. Auto (MEC-02)			
DATE STARTED: 4/4/08		COMPLETED: 4/6/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
												Begin Coring @ 29.2 ft	
-29.0	29.2	1.0	1:20	(0.7)	(0.0)	RUN-1	(16.8)	(10.2)				LIMESTONE, boundstone, white (10YR8/1), hard, wet, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation) (continued) 29.2ft: white (10YR8/1), hard, indurated, trace coralline, strong HCl reaction, few vugs	
-30.0	30.2	5.0	0:59 0:30 0:29 0:38 0:37	70% (4.5) 90%	0% (2.6) 52%	RUN-2	90%	55%					
-35.0	35.2	5.0	0:49 0:30 0:30 0:26 0:27	(4.9) 98%	(4.5) 90%	RUN-3							
-40.0	40.2	5.0	0:36 0:41 0:21 0:28 0:36	(4.6) 92%	(2.4) 48%	RUN-4						40.2ft: recrystallized calcite	
-45.0	45.2	5.0	0:40 0:31 0:28 0:47 0:50	(4.5) 90%	(1.9) 38%	RUN-5						45.2ft: white (10YR8/1) to 46.5ft then light gray (10YR7/1) to 47.8ft	
-50.0	50.2	5.0	0:51 0:42 0:33 0:30 0:30	(4.4) 88%	(3.9) 78%	RUN-6	(31.1) 59%	(11.9) 23%				-47.6 LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, trace to few gastropod shell molds and casts, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)	
-55.0	55.2	5.0	0:29 0:22 0:16 0:23 0:24	(4.0) 80%	(0.0) 0%	RUN-7						55.2ft: moderately hard to hard, moderately indurated to indurated, few shell molds and casts	
-60.0	60.2	5.0	0:31 0:19 0:30 0:29 0:35	(3.1) 62%	(1.5) 30%	RUN-8						60.2ft: hard, indurated	
-65.0	65.2	5.0	0:32 0:35 0:12 0:10 0:21	(2.2) 44%	(0.4) 8%	RUN-9							
-70.0	70.2	5.0	0:28 0:28 0:49 0:34 0:32	(2.1) 42%	(1.5) 30%	RUN-10							
-75.0	75.2	5.0	0:43 0:36 0:37 0:40 0:50	(2.3) 46%	(0.0) 0%	RUN-11						75.2ft: moderately hard to hard, moderately indurated	
-80.0	80.2	5.0	0:50 0:43 0:17 0:24 0:28	(3.3) 66%	(1.6) 32%	RUN-12						80.2ft: moderately hard, moderately indurated	
-85.0	85.2	5.0	0:28 0:15 0:16 0:24 0:41	(2.3) 46%	(0.5) 10%	RUN-13						85.2ft: trace fine grained sand	
-90.0	90.2	5.0	0:26 0:24 0:23 0:33 0:35	(3.0) 60%	(1.3) 26%	RUN-14						90.2ft: hard, indurated, few to little shell molds and casts	
-95.0	95.2	5.0	0:24 0:20 0:13 0:23 0:18	(2.0) 40%	(0.0) 0%	RUN-15						95.2ft: moderately hard to hard, moderately indurated, trace shell molds and casts	
-100.0	100.2											-100.0	
												Coring Terminated at Elevation -100.0	100.2

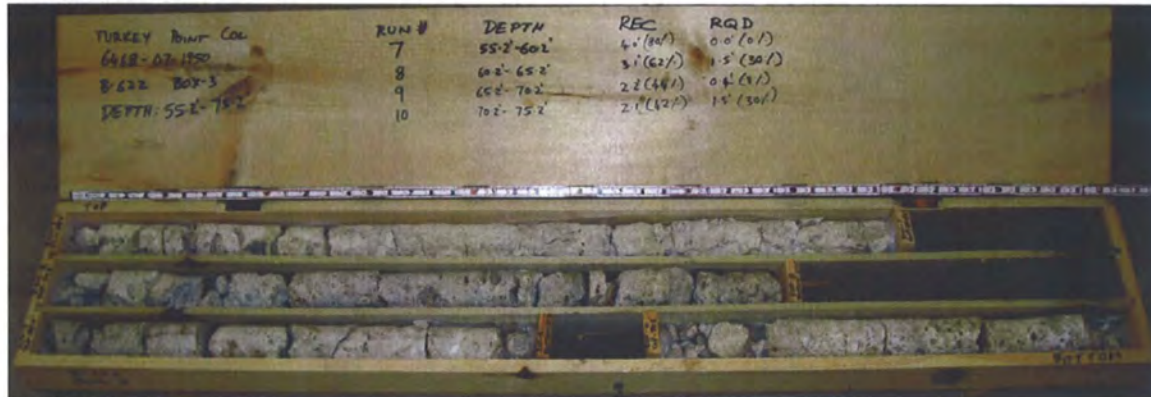
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/18/08



B-622 - Box 1



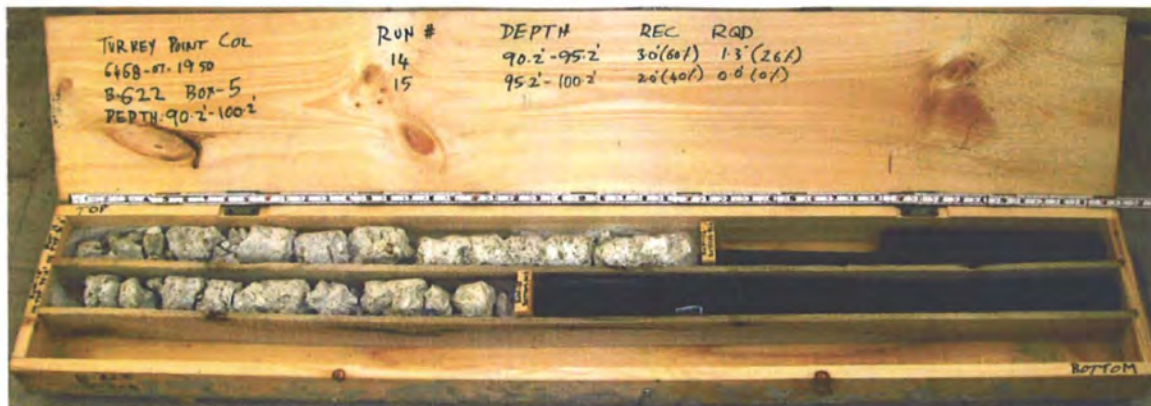
B-622 - Box 2



B-622 - Box 3



B-622 - Box 4



B-622 - Box 5

GEOTECHNICAL BORING LOG

Prepared By SP24 Date 5-30-28

Checked By 173 Date 5-31-09

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: G. Pillappa				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-55 LC (RAL)					DRILLER: R. Banks/ J. Rosser					GROUND WATER (ft)		
BORING NO.: B-623					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA		
GROUND ELEV.: -1.3 ft (NAVD88)					NORTHING: 397,423 US ft (NAD83/90)					EASTING: 876,523 US ft (NAD83/90)					24 HR. NA		
TOTAL DEPTH: 100.2 ft			BORING DIAMETER: 4" to 33.8', 3" to 100.2'					CASING DEPTH: 4" to 33.8', 3" to 100.2'					HAMMER (ID): 140 lb. Auto (MEC-02)				
DATE STARTED: 4/1/08			COMPLETED: 4/2/08			CORE SIZE: HQ3			BITS USED: 3 7/8" Tricone								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION				
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100							
-1.3					Ground Surface												
-1.3	0.0	WOH	WOH	WOH	0						623-1		-1.3		0.0		
-3.8	2.5				WOH						623-2						
-5.8	4.5	WOH	WOH	2									-5.0		3.7		
		5	9	9							623-3						
-8.3	7.0																
		5	9	7							623-4						
-10.3	9.0																
		3	5	5							623-5						
-12.8	11.5																
		3	5	18							623-6						
-15.3	14.0																
		2	3	15							623-7						
-19.3	18.0																
		5	7	5							623-8						
-24.8	23.5																
		3	4	25							623-9		-26.3		25.0		
-29.8	28.5																
		25	37	7							623-10						
-34.8	33.5																
-36.5	35.2	50/0.4									623-11						
											RUN-1						
-41.5	40.2																
											RUN-2						
-46.5	45.2																
											RUN-3						
-51.5	50.2												-49.8		48.5		
											RUN-4						
-56.5	55.2																
											RUN-5						
-61.5	60.2																
											RUN-6						
-66.5	65.2																
											RUN-7						
-71.5	70.2																
											RUN-8						

[illegible]

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



SHEET 1 OF 1

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: G. Pillappa			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-55 LC (RAL)				DRILLER: R. Banks/ J. Rosser				GROUND WATER (ft)	
BORING NO.: B-623				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.3 ft (NAVD88)				NORTHING: 397,423 US ft (NAD83/90)				EASTING: 876,523		US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 100.2 ft				CASING DEPTH: 4" to 33.8', 3" to 100.2'						HAMMER (ID): 140 lb. Auto (MEC-02)			
DATE STARTED: 4/1/08		COMPLETED: 4/2/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
												Begin Coring @ 35.2 ft	
-36.5	35.2	5.0	0:45 0:27 0:27 0:32	(5.0) 100%	(3.4) 68%	RUN-1	(13.2) 99%	(8.9) 67%				LIMESTONE, boundstone, white (10YR8/1), medium hard, wet, trace shells, strong HCl reaction (Upper Fort Thompson Formation) (continued) 35.2ft: white (10YR8/1), hard, indurated, fossiliferous, coralline, strong HCl reaction, few vugs	
-41.5	40.2	5.0	0:29 0:29 0:31 0:22 0:24	(5.0) 100%	(4.0) 80%	RUN-2							
-46.5	45.2	5.0	0:21 0:28 0:29 0:30 0:25	(4.9) 98%	(3.2) 64%	RUN-3						45.2ft: white (10YR8/1) to 46.6ft then gray (10YR6/1) to 48.5ft, trace coralline	
-51.5	50.2	5.0	0:30 0:33 0:23 0:17 0:23	(4.7) 94%	(3.8) 76%	RUN-4	(23.2) 45%	(10.2) 20%				LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, few vugs, trace to few shells and shell molds/casts, strong HCl reaction (Lower Fort Thompson Formation)	
-56.5	55.2	5.0	0:20 0:16 0:06 0:07 0:18	(2.4) 48%	(1.5) 30%	RUN-5							
-61.5	60.2	5.0	0:20 0:16 0:10 0:06 0:21	(1.9) 38%	(0.0) 0%	RUN-6							
-66.5	65.2	5.0	0:13 0:15 0:20 1:16 0:14	(1.5) 30%	(0.0) 0%	RUN-7						65.2ft: trace fine sand	
-71.5	70.2	5.0	0:26 0:12 0:16 0:17 0:12	(0.8) 16%	(0.0) 0%	RUN-8							
-76.5	75.2	5.0	0:15 0:25 0:27 0:20 0:14	(0.8) 16%	(0.0) 0%	RUN-9							
-81.5	80.2	5.0	0:19 0:23 0:26 0:28 0:19	(0.5) 10%	(0.0) 0%	RUN-10							
-86.5	85.2		N=22			623-12							
-88.0	86.7	3.5	0:10/0.5 0:17 0:23 0:31	(2.4) 69%	(0.5) 14%	RUN-11						85.2ft: Switch sampling method to SPT 85.2ft: white (10YR8/1), soft, wet, some fine grained sand, strong HCl reaction 86.7ft: Switch sampling method to coring 86.7ft: hard, indurated, fossiliferous, few vugs	
-91.5	90.2	5.0	0:30 0:19 0:18 0:25 0:28	(4.3) 86%	(2.7) 54%	RUN-12							
-96.5	95.2	5.0	0:16 0:15 0:14 0:18 0:17	(2.2) 44%	(0.0) 0%	RUN-13							
-101.5	100.2											Coring Terminated at Elevation -101.5	

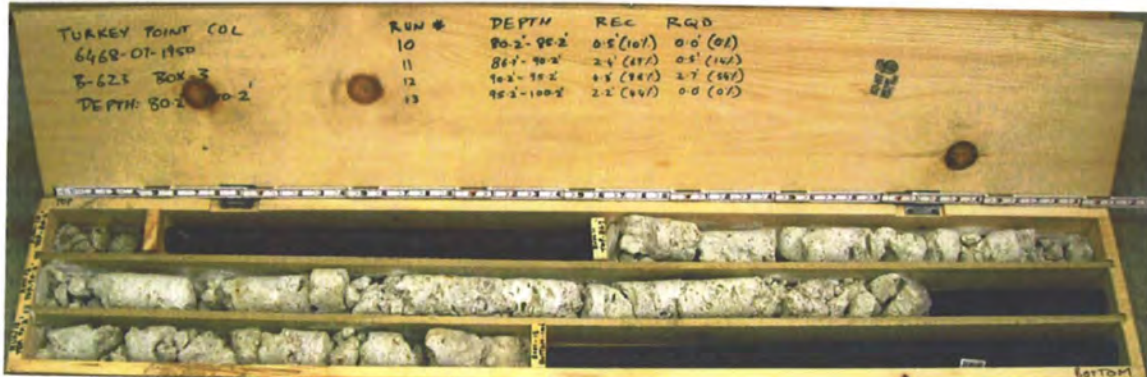
TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



B-623 - Box 1



B-623 - Box 2



B-623 - Box 3



GEOTECHNICAL BORING LOG

Prepared By SPZ Date 5-30-08Checked By BM Date 5-30-08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: L. Bisson				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550 (ATL)					DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)			
BORING NO.: B-624					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core				0 HR.		NA	
GROUND ELEV.: -1.4 ft (NAVD88)					NORTHING: 397,327 US ft (NAD83/90)					EASTING: 876,514 US ft (NAD83/90)				24 HR.		NA	
TOTAL DEPTH: 103.2 ft			BORING DIAMETER: 4" to 36.0', 3" to 103.2'					CASING DEPTH: 4" to 36.0', 3" to 103.0'				HAMMER (ID): 140 lb. Auto (MEC-03)					
DATE STARTED: 4/1/08			COMPLETED: 4/2/08			CORE SIZE: HQ3				BITS USED: 4" Roller Cone							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100							
-1.4					Ground Surface												
-1.4	0.0	WOR	WOR	WOR	0						624-1			-1.4	0.0	MUCK, light olive brown (2.5Y5/3), to very dark grayish brown (2.5Y3/2), very soft, wet, organic, strong HCl reaction	
-3.9	2.5	3	7	7							624-2A&B			-4.4	3.0	LIMESTONE, boundstone, pale yellow (2.5Y8/2), to light gray (2.5Y7/1), very soft, wet, trace sand, strong HCl reaction, oolitic (Miami Formation)	
-6.4	5.0	12	12	9							624-3					5.0ft: soft	
-8.9	7.5	5	48	9							624-4					7.5ft: white (10YR8/1), to gray (10YR5/1), hard, fossiliferous	
-11.4	10.0	5	5	16							624-5					10.0ft: white (10YR8/1), soft	
-13.9	12.5	6	17	17							624-6					12.5ft: white (2.5Y8/1), to light gray (2.5Y7/1), medium hard, trace sand	
-16.4	15.0	6	4	16							624-7					15.0ft: soft	
-20.9	19.5	5	5	4							624-8					19.5ft: white (10YR8/1), very soft	
-25.9	24.5	25	14	19							624-9			-25.4	24.0	LIMESTONE, boundstone, white (2.5Y8/1), medium hard, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation)	
-30.9	29.5	26	46	34							624-10					29.5ft: light gray (2.5Y7/1), hard	
-35.9	34.5										624-11					34.5ft: mottled gray (2.5Y6/1)	
-37.1	35.7	11	48	50/0.2							RUN-1					35.7ft: Switch sampling method to coring	
-39.6	38.2										RUN-2					35.7ft: white (10YR8/1), to light gray (10YR7/1), hard, indurated, coralline, recrystallized calcite, strong HCl reaction, few to little vugs	
-44.6	43.2										RUN-3					36.8ft: loss of circulation	
-49.6	48.2										RUN-4					38.2ft: white (2.5Y8/1), mottled light gray (10YR7/1), and olive yellow (2.5Y6/6)	
-54.6	53.2										RUN-5			-49.6	48.2	LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, little to few vugs, strong HCl reaction (Lower Fort Thompson Formation)	
-59.6	58.2										RUN-6					53.2ft: white (2.5Y8/1), hard to moderately hard	
-64.6	63.2										RUN-7					58.2ft: white (5Y8/1), medium hard to hard, moderately indurated, some coarse grained sand, few vugs	
-66.6	65.2										RUN-8					63.2ft: white (10YR8/1), hard, indurated	
-69.6	68.2										RUN-9					65.2ft: white (2.5Y8/1)	
-74.6	73.2										RUN-10					73.2ft: white (10YR8/1)	

TURKEY POINT COL BORE TURKEY POINT COL.GDT 5/30/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: L. Bisson								
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550 (ATL)		DRILLER: L. Carter/ J. Landeros		GROUND WATER (ft)								
BORING NO.: B-624		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA								
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 397,327 US ft (NAD83/90)		EASTING: 876,514 US ft (NAD83/90)		24 HR. NA								
TOTAL DEPTH: 103.2 ft		BORING DIAMETER: 4" to 36.0', 3" to 103.2'		CASING DEPTH: 4" to 36.0', 3" to 103.0'		HAMMER (ID): 140 lb. Auto (MEC-03)								
DATE STARTED: 4/1/08		COMPLETED: 4/2/08		CORE SIZE: HQ3		BITS USED: 4" Roller Cone								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80				100	
-76.2					Continued from previous page									
-77.6	76.2									RUN-11		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, little to few vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued) 76.2ft: moderately hard, moderately indurated, some coarse sand 84.2 to 86.2ft: sand lenses; very soft/fast drilling 88.2ft: moderately hard to hard, trace vugs 93.2ft: white (2.5Y8/1), moderately hard, moderately indurated 98.2ft: hard, indurated, few vugs		
-79.6	78.2									RUN-12				
-84.6	83.2									RUN-13				
-89.6	88.2									RUN-14				
-94.6	93.2									RUN-15				
-99.6	98.2									RUN-16				
												-104.6	103.2	Boring Terminated at Elevation -104.6 ft

TURKEY POINT COL BORE, TURKEY POINT.GPJ, TURKEY POINT COL.GDT, 5/30/08



SHEET 1 OF 1

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: L. Bisson			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft) 0 HR. NA 24 HR. NA		
BORING NO.: B-624				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core					
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 397,327 US ft (NAD83/90)				EASTING: 876,514 US ft (NAD83/90)		HAMMER (ID): 140 lb. Auto (MEC-03)			
TOTAL DEPTH: 103.2 ft				CASING DEPTH: 4" to 36.0', 3" to 103.0'									
DATE STARTED: 4/1/08		COMPLETED: 4/2/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %RQD (ft) %		SAMP. NO.	STRATA REC (ft) %RQD (ft) %		L O G	DESCRIPTION AND REMARKS			
										Begin Coring @ 35.7 ft			
-37.1	35.7	2.5	1:27	(2.5)	(1.5)	RUN-1	(12.5)	(10.8)		LIMESTONE, boundstone, white (2.5Y8/1), medium hard, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation) (continued) 35.7ft: white (10YR8/1), to light gray (10YR7/1), hard, indurated, coralline, recrystallized calcite, strong HCl reaction, few to little vugs			
-39.6	38.2	5.0	1:29	100%	60%		100%	86%					
			1:20	(5.0)	(4.6)	RUN-2				36.8ft: loss of circulation 38.2ft: white (2.5Y8/1), mottled light gray (10YR7/1), and olive yellow (2.5Y6/6) 43.2ft: white (10YR8/1), to 46.6ft then grayish brown (10YR5/2), fossiliferous, trace vugs			
			1:31	100%	92%								
			1:36							48.2			
-44.6	43.2	5.0	1:29	(5.0)	(4.7)	RUN-3							
			1:50	100%	94%								
			1:29	(5.0)	(4.6)	RUN-4	(40.7)	(21.4)					
-49.6	48.2	5.0	1:33	100%	92%		74%	39%		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, little to few vugs, strong HCl reaction (Lower Fort Thompson Formation)			
			1:11	(4.0)	(1.7)	RUN-5							
			1:19	80%	34%					53.2ft: white (2.5Y8/1), hard to moderately hard			
-54.6	53.2	5.0	1:03	(4.3)	(2.4)	RUN-6							
			0:33	86%	48%					58.2ft: white (5Y8/1), medium hard to hard, moderately indurated, some coarse grained sand, few vugs			
			0:18	(0.5)	(0.0)	RUN-7							
			0:25	(2.0)	(1.0)	RUN-8				63.2ft: white (10YR8/1), hard, indurated 65.2ft: white (2.5Y8/1)			
-59.6	58.2	5.0	0:34	(2.6)	(0.4)								
			0:16	52%	8%	RUN-9				73.2ft: white (10YR8/1)			
			0:03	(2.0)	(0.0)								
-64.6	63.2	2.0	1:22	(2.0)	(1.8)	RUN-11				76.2ft: moderately hard, moderately indurated, some coarse sand			
			0:25	(4.7)	(3.5)	RUN-12							
-66.6	65.2	3.0	1:02	94%	70%					84.2 to 86.2ft: sand lenses; very soft/fast drilling			
			0:35	(1.6)	(0.0)	RUN-13							
-69.6	68.2	5.0	1:00	(4.3)	(1.8)	RUN-14				88.2ft: moderately hard to hard, trace vugs			
			1:52	86%	36%								
-74.6	73.2	3.0	0:57	(4.0)	(2.5)	RUN-15				93.2ft: white (2.5Y8/1), moderately hard, moderately indurated			
			0:40	(3.7)	(1.7)	RUN-16							
-77.6	76.2	2.0	1:50	74%	34%					98.2ft: hard, indurated, few vugs			
			1:53	(3.7)	(1.7)								
-79.6	78.2	5.0	1:05	(4.0)	(2.5)					103.2			
			1:35	(1.6)	(0.0)								
			1:10	(4.3)	(1.8)					Coring Terminated at Elevation -104.6			
-84.6	83.2	5.0	1:16	80%	50%								
			1:20	(4.0)	(2.5)								
			0:50	(3.7)	(1.7)								
-89.6	88.2	5.0	0:48	(4.0)	(2.5)								
			0:45	(3.7)	(1.7)								
			0:03	(4.0)	(2.5)								
-94.6	93.2	5.0	0:53	(4.0)	(2.5)								
			0:59	(4.0)	(2.5)								
-99.6	98.2	5.0	0:41	(4.0)	(2.5)								
			0:52	(4.0)	(2.5)								
			0:47	(4.0)	(2.5)								
			0:21	(4.0)	(2.5)								
-104.6	103.2	5.0	0:33	(4.0)	(2.5)								
			0:30	(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								
				(4.0)	(2.5)								

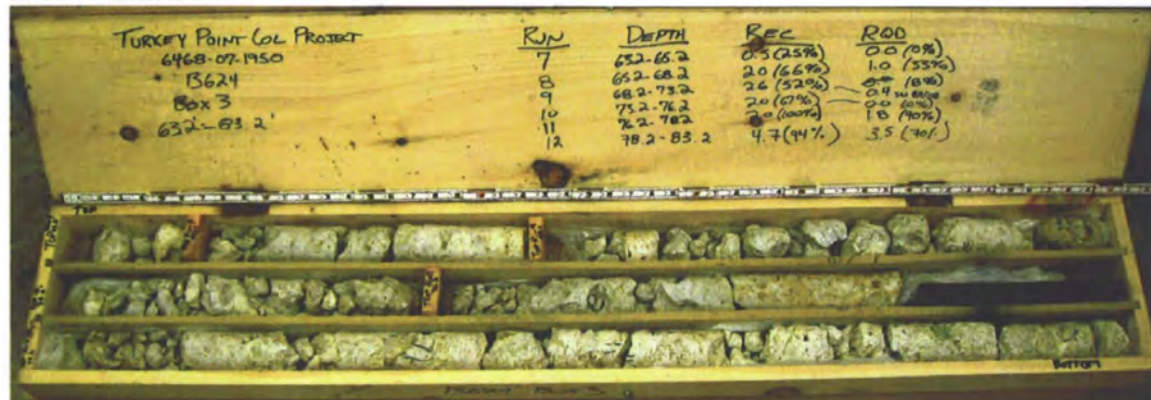
TURKEY POINT COL CORE TURKEY POINT GPI TURKEY POINT COL GDI 5:30:08



B-624 - Box 1



B-624 - Box 2



B-624 - Box 3



B-624 - Box 4



BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade				GEOLOGIST: J. Liles			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (Miller)				DRILLER: R. White/ J. Dugger/ C. White				GROUND WATER (ft)			
BORING NO.: B-625				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR.		NA	
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 397,107 US ft (NAD83/90)				EASTING: 876,961 US ft (NAD83/90)				24 HR.		NA	
TOTAL DEPTH: 126.7 ft		BORING DIAMETER: 4" to 15.1', 3" to 126.7'				CASING DEPTH: 4" to 15.1'				HAMMER (ID):140 lb. Auto (M06)					
DATE STARTED: 3/23/08		COMPLETED: 3/24/08		CORE SIZE: HQ3				BITS USED: 2 7/8" Tricone							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-1.4					Ground Surface								-1.4	0.0	
-1.4	0.0	WOH	WOH	WOH	0						625-1			MUCK, black (2.5Y2.5/1), very soft, wet, strong HCl reaction, mostly organic, fibrous	
-3.6	2.2										625-2A&B		-4.2	2.8	
-6.5	5.1	1	4	10		14								LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, little to some fine grained sand, strong HCl reaction, oolitic (Miami Formation)	
-9.0	7.6	10	9	9		18					625-3				
-11.5	10.1	10	9	5		14					625-4		7.6ft: trace sand		
-13.9	12.5	8	6	8		14					625-5				
-16.6	15.2	9	13	12		25					625-6		12.5ft: soft		
-17.8	16.4	5	15	50/0.2						65.0.7	625-7		15.2ft: hard		
											RUN-1		16.4ft: Switch sampling method to coring		
-21.8	20.4										RUN-2		16.4ft: white (2.5Y8/1), moderately hard, moderately indurated, strong HCl reaction, trace coarse grained sand, locally interconnected vugs filled with sand		
-26.8	25.4										RUN-3		-25.4	24.0	
														LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, strong HCl reaction, coralline, trace vugs (Upper Fort Thompson Formation)	
-31.8	30.4										RUN-4				
-36.8	35.4										RUN-5				
-41.8	40.4										RUN-6		40.4ft: hard, indurated, recrystallized calcite, few vugs		
-46.8	45.4										RUN-7		45.4ft: white (2.5Y8/1) to 48.1ft then light gray (10YR7/1) to 50.4ft		
-51.8	50.4										RUN-8		-51.8	50.4	
														LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation)	
-56.8	55.4										RUN-9				
-61.8	60.4										RUN-10				
-66.8	65.4										RUN-11		-66.8	65.4	
														POORLY GRADED SAND (SP), light gray (5Y7/1), wet, fine grained sand, strong HCl reaction, trace limestone fragments	
-71.8	70.4										RUN-12		-71.8	70.4	
														LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, strong HCl reaction, trace vugs	

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 7/10/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: J. Liles				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (Miller)			DRILLER: R. White/ J. Dugger/ C. White			GROUND WATER (ft)				
BORING NO.: B-625			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: -1.4 ft (NAVD88)			NORTHING: 397,107 US ft (NAD83/90)			EASTING: 876,961 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 126.7 ft			BORING DIAMETER: 4" to 15.1', 3" to 126.7'			CASING DEPTH: 4" to 15.1'			HAMMER (ID): 140 lb. Auto (M06)				
DATE STARTED: 3/23/08			COMPLETED: 3/24/08			CORE SIZE: HQ3			BITS USED: 2 7/8" Tricone				
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-76.2		Continued from previous page											
-76.8	75.4												LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, strong HCl reaction, trace vugs (continued)
-81.8	80.4												75.4ft: moderately hard, moderately indurated
-86.8	85.4												80.4ft: fossiliferous, sandy
-91.8	90.4												85.4ft: some vugs
-96.8	95.4												90.4ft: indurated
-101.8	100.4												95.4ft: moderately indurated, few vugs
-106.8	105.4												100.4ft: mostly vugs, few shell molds and casts
-111.8	110.4												105.4ft: little to some shell molds and casts
-116.8	115.4												
-121.8	120.4	20	50/0.4										Silty SAND (SM), light gray (5Y7/1), wet, fine to coarse grained sand, strong HCl reaction, trace fine to coarse limestone gravel fragments (Tamiami Formation)
-126.6	125.2	5	8	12									120.4ft: Switch sampling method to SPT
													120.4ft: light olive gray (5Y6/2), very dense
													125.2ft: medium dense
													Boring Terminated at Elevation -128.1 ft

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 7/10/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: J. Liles
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger/ C. White	GROUND WATER (ft)
BORING NO.: B-625	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 397,107 US ft (NAD83/90)	EASTING: 876,961 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 126.7 ft	CASING DEPTH: 4" to 15.1'	HAMMER (ID): 140 lb. Auto (M06)	
DATE STARTED: 3/23/08	COMPLETED: 3/24/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Begin Coring @ 16.4 ft
-17.8	16.4	4.0	1:30 1:34 0:37 0:10	(1.0) 25%	(0.9) 23%	RUN-1	(1.9) 25%	(0.9) 12%		LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, little to some fine grained sand, strong HCl reaction, oolitic (Miami Formation) (continued)
-21.8	20.4									16.4ft: white (2.5Y8/1), moderately hard, moderately indurated, strong HCl reaction, trace coarse grained sand, locally interconnected vugs filled with sand
		5.0	0:15 0:21 0:22 1:31 1:15	(0.9) 18%	(0.0) 0%	RUN-2				
-26.8	25.4						(18.4) 70%	(13.2) 50%		LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, strong HCl reaction, coralline, trace vugs (Upper Fort Thompson Formation)
		5.0	1:31 1:07 1:10 1:22 1:44	(4.0) 80%	(2.1) 42%	RUN-3				
-31.8	30.4									
		5.0	1:27 1:49 0:51 0:52 1:49	(2.8) 56%	(1.9) 38%	RUN-4				
-36.8	35.4									
		5.0	0:42 1:11 0:37 0:32 0:05	(2.0) 40%	(1.1) 22%	RUN-5				
-41.8	40.4									
		5.0	1:34 1:23 1:28 2:15 2:04	(4.6) 92%	(3.8) 76%	RUN-6				40.4ft: hard, indurated, recrystallized calcite, few vugs
-46.8	45.4									
		5.0	3:50 1:45 2:24 2:55 2:37	(5.0) 100%	(4.3) 86%	RUN-7				45.4ft: white (2.5Y8/1) to 48.1ft then light gray (10YR7/1) to 50.4ft
-51.8	50.4									
		5.0	1:41 1:34 1:30 1:30 0:48	(4.6) 92%	(4.3) 86%	RUN-8	(12.6) 84%	(9.0) 60%		LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation)
-56.8	55.4									
		5.0	0:57 1:00 0:56 1:12 0:55	(4.8) 96%	(2.6) 52%	RUN-9				
-61.8	60.4									
		5.0	0:59 0:58 0:56 0:10 0:07	(3.2) 64%	(2.1) 42%	RUN-10				
-66.8	65.4									
		5.0	0:06 0:32 0:10 0:24 0:07	(1.4) 28%	(N/A)	RUN-11	(1.4) 28%	(NA)		POORLY GRADED SAND (SP), light gray (5Y7/1), wet, fine grained sand, strong HCl reaction, trace limestone fragments
-71.8	70.4									
		5.0	0:44 0:08 0:09 0:10 0:51	(1.7) 34%	(0.5) 10%	RUN-12	(24.0) 53%	(9.4) 21%		LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, strong HCl reaction, trace vugs
-76.8	75.4									
		5.0	0:19 0:10 0:20 0:37 1:52	(1.2) 24%	(0.5) 10%	RUN-13				75.4ft: moderately hard, moderately indurated
-81.8	80.4									
		5.0	0:28 0:36 0:38 1:10 0:20	(3.8) 76%	(1.5) 30%	RUN-14				80.4ft: fossiliferous, sandy
-86.8	85.4									
		5.0	0:10 0:20 0:34 0:25 0:08	(1.4) 28%	(0.0) 0%	RUN-15				85.4ft: some vugs
-91.8	90.4									

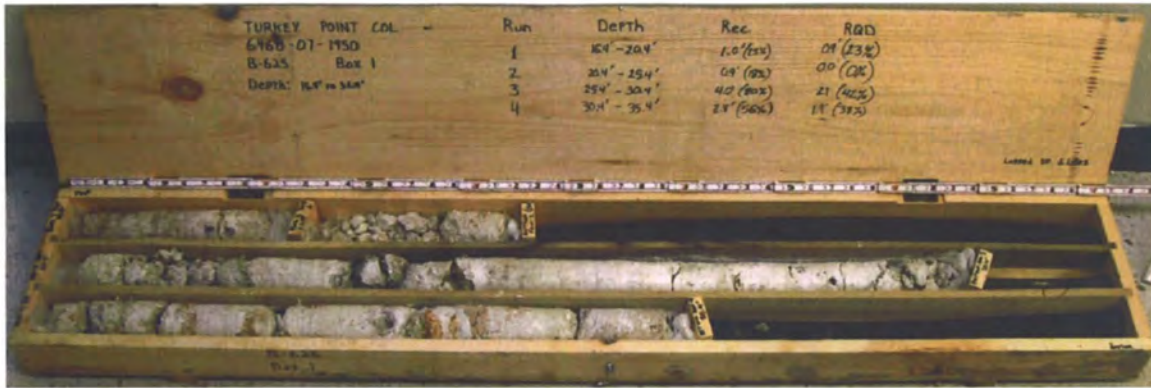
TURKEY POINT COL CORE TURKEY POINT L.G.P.J. TURKEY POINT COL GDT 7/10/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: J. Liles			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (Miller)				DRILLER: R. White/ J. Dugger/ C. White			GROUND WATER (ft) 0 HR. NA 24 HR. NA		
BORING NO.: B-625				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core					
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 397,107 US ft (NAD83/90)				EASTING: 876,961 US ft (NAD83/90)					
TOTAL DEPTH: 126.7 ft				CASING DEPTH: 4" to 15.1'						HAMMER (ID): 140 lb. Auto (M06)			
DATE STARTED: 3/23/08		COMPLETED: 3/24/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
												Continued from previous page	
-96.8	95.4	5.0	0:22 0:08 0:17 0:15 0:13	(1.5) 30%	(0.5) 10%	RUN-16						90.4ft: indurated LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, strong HCl reaction, trace vugs (continued)	
		5.0	0:20 0:14 0:31 0:18 0:27	(3.4) 68%	(0.9) 18%	RUN-17						95.4ft: moderately indurated, few vugs	
-101.8	100.4												
		5.0	0:39 0:24 0:25 0:31 0:28	(4.4) 88%	(2.0) 40%	RUN-18						100.4ft: mostly vugs, few shell molds and casts	
-106.8	105.4												
		5.0	0:24 0:29 0:24 0:20 0:30	(3.5) 70%	(3.2) 64%	RUN-19						105.4ft: little to some shell molds and casts	
-111.8	110.4												
		5.0	0:23 0:34 0:46 0:21 0:12	(2.4) 48%	(0.3) 6%	RUN-20							
-116.8	115.4												
		5.0	0:28 0:27 0:17 0:24 0:34	(1.8) 36%	(0.0) 0%	RUN-21	(1.1) 26%	(NA)				-117.5 -121.8 116.1 120.4	
-121.8	120.4											Silty SAND (SM), light gray (5Y7/1), wet, fine to coarse grained sand, strong HCl reaction, trace fine to coarse limestone gravel fragments (Tamiami Formation)	
Coring Terminated at Elevation -121.8													

TURKEY POINT COL CORE TURKEY POINT T.GPJ TURKEY POINT COL.GDT 7/10/08



B-625 - Box 1



B-625 - Box 2



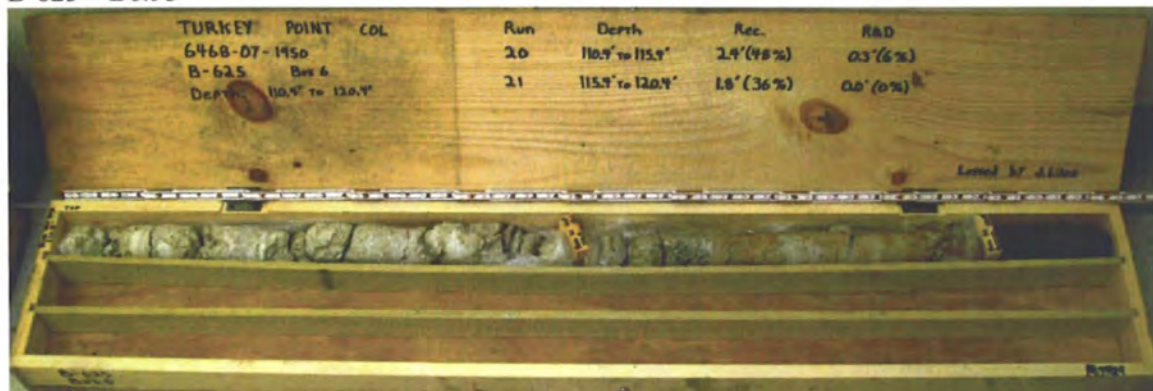
B-625 - Box 3



B-625 - Box 4



B-625 - Box 5



B-625 - Box 6

GEOTECHNICAL BORING LOG

Prepared By DPZ Date 5-30-08

Checked By MM Date 8-20-08

SHEET 1 OF 2

[illegible]



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: J. Liles					
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (Miller)			DRILLER: R. White/ J. Dugger			GROUND WATER (ft)					
BORING NO.: B-626			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA					
GROUND ELEV.: -1.6 ft (NAVD88)			NORTHING: 396,875 US ft (NAD83/90)			EASTING: 876,857 US ft (NAD83/90)			24 HR. NA					
TOTAL DEPTH: 100.6 ft			BORING DIAMETER: 4" to 29.4", 3" to 100.6'			CASING DEPTH: 4" to 29.4'			HAMMER (ID): 140 lb. Auto (M06)					
DATE STARTED: 3/18/08			COMPLETED: 3/20/08			CORE SIZE: HQ3			BITS USED: 2 7/8" Roller Cone					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI			
-76.4					Continued from previous page									
-80.2	78.6									RUN-12		LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued) 88.6ft: medium hard to moderately hard, friable to moderately indurated		
-85.2	83.6									RUN-13				
-90.2	88.6									RUN-14				
-95.2	93.6									RUN-15				
-100.2	98.6									RUN-16				
												-102.2	100.6	Boring Terminated at Elevation -102.2 ft

TURKEY POINT COL BORE TURKEY POINT GP1 TURKEY POINT COL.GDF 530 08

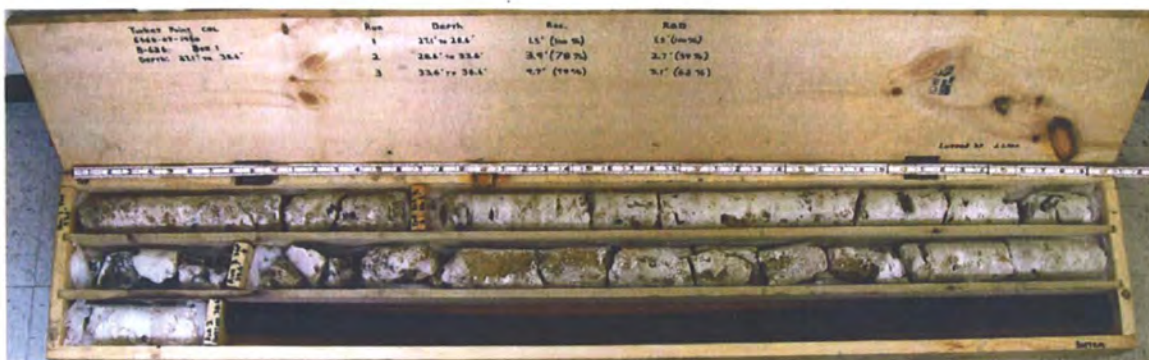


SHEET 1 OF 1

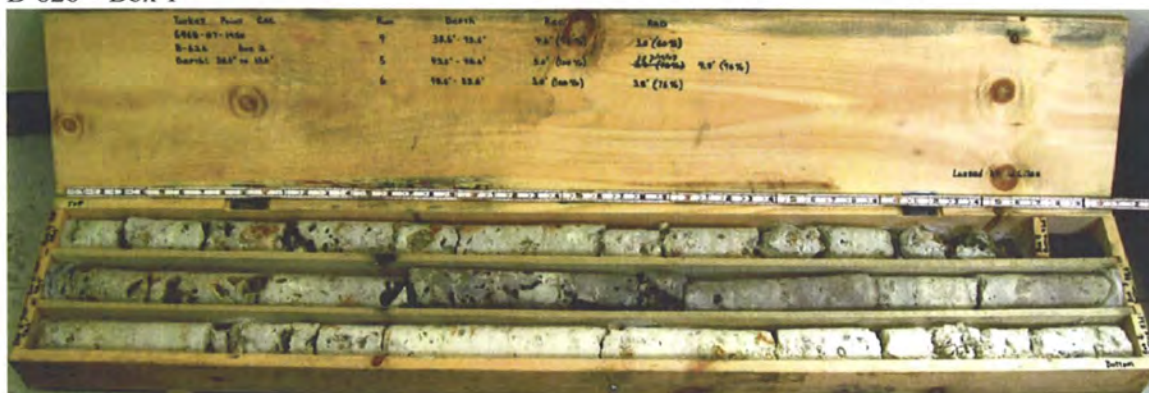
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: J. Liles
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger	GROUND WATER (ft)
BORING NO.: B-626	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.6 ft (NAVD88)	NORTHING: 396,875 US ft (NAD83/90)	EASTING: 876,857 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 100.6 ft	CASING DEPTH: 4" to 29.4'	HAMMER (ID): 140 lb. Auto (M06)	
DATE STARTED: 3/18/08	COMPLETED: 3/20/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS
										Begin Coring @ 27.1 ft
-28.7	27.1	1.5	1:47	(1.5)	(1.5)	RUN-1	(19.7)	(15.1)		LIMESTONE, boundstone, white (2.5Y8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation)
-30.2	28.6	5.0	0:41/0.5	100%	100%	RUN-2	92%	70%		27.1ft: Switch sampling method to coring (continued)
			0:53	(3.9)	(2.7)					27.1ft: white (2.5Y8/1), moderately hard, moderately indurated, fossiliferous, strong HCl reaction, few vugs
			1:03	78%	54%					
			1:00							
			1:15							
-35.2	33.6	5.0	0:35	(4.7)	(3.1)	RUN-3				27.5ft: loss of circulation
			0:42	94%	62%					28.6ft: hard, indurated
			0:51							33.6ft: moderately hard, moderately indurated, recrystallized calcite
			1:03							
			0:49							
-40.2	38.6	5.0	0:53	(4.6)	(3.0)	RUN-4				38.6ft: moderately indurated to indurated, little vugs
			1:00	92%	60%					
			1:18							
			0:57							
			1:03							
			1:01							
-45.2	43.6	5.0	1:01	(5.0)	(4.8)	RUN-5				43.6ft: white (2.5Y8/1) to 45.3ft then light gray (10YR6/1) to 48.6ft
			1:37	100%	96%					
			1:32							
			1:30							
			1:09							
-50.2	48.6	5.0	1:20	(5.0)	(3.8)	RUN-6	(30.9)	(14.4)		LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)
			0:59	100%	76%		59%	28%		
			1:02							
			0:52							
			1:00							
-55.2	53.6	5.0	0:51	(3.3)	(1.0)	RUN-7				
			0:47	66%	20%					
			0:30							
			0:43							
			1:23							
-60.2	58.6	5.0	0:36	(3.5)	(1.3)	RUN-8				
			1:16	70%	26%					
			0:32							
			0:18							
			1:08							
-65.2	63.6	5.0	0:41	(1.8)	(0.9)	RUN-9				63.6ft: moderately hard to hard, moderately indurated to indurated
			0:40	36%	18%					
			0:45							
			0:26							
			0:25							
-70.2	68.6	5.0	1:20	(1.9)	(1.1)	RUN-10				
			0:46	38%	22%					
			0:14							
			0:27							
			0:24							
-75.2	73.6	5.0	0:10	(2.4)	(1.5)	RUN-11				
			0:10	48%	30%					
			0:20							
			1:08							
			1:35							
-80.2	78.6	5.0	1:10	(1.3)	(0.3)	RUN-12				
			1:12	26%	6%					
			1:09							
			0:48							
			0:31							
-85.2	83.6	5.0	0:46	(3.5)	(1.5)	RUN-13				
			1:05	70%	30%					
			1:21							
			1:38							
			1:39							
-90.2	88.6	5.0	0:47	(2.9)	(0.4)	RUN-14				88.6ft: medium hard to moderately hard, friable to moderately indurated
			0:46	58%	8%					
			1:03							
			0:55							
			0:33							
-95.2	93.6	5.0	0:45	(3.8)	(2.6)	RUN-15				
			0:19	76%	52%					
			0:41							
			0:12							
			0:37							
-100.2	98.6	2.0	0:29	(1.5)	(0.0)	RUN-16				
			0:36	75%	0%					
-102.2	100.6									Coring Terminated at Elevation -102.2

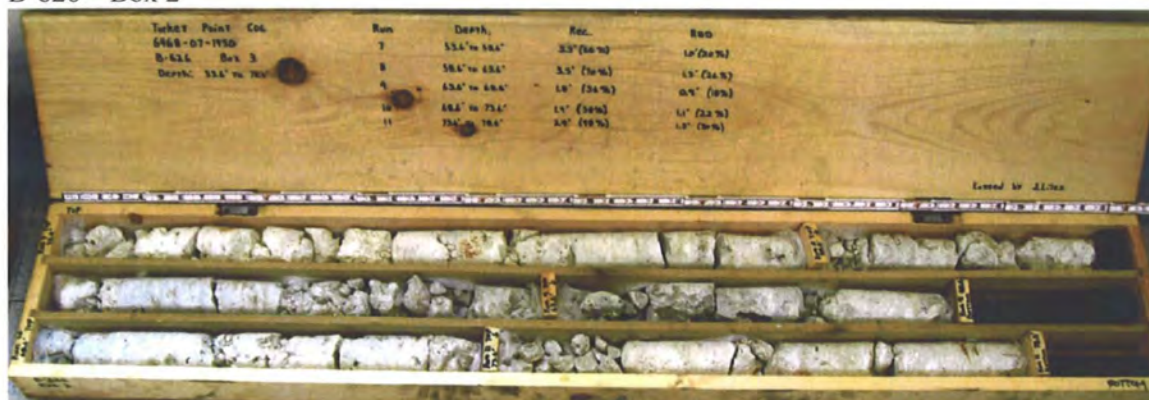
TURKEY POINT COL CORE TURKEY POINT (GP) TURKEY POINT COL GDT 7/25/08



B-626 - Box 1



B-626 - Box 2



B-626 - Box 3



B-626 - Box 4



GEOTECHNICAL BORING LOG

Prepared By APZ Date 5-30-08Checked By MM Date 5-30-08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: L. Bisson					
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)			
BORING NO.: B-627				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA			
GROUND ELEV.: -1.3 ft (NAVD88)				NORTHING: 396,835 US ft (NAD83/90)				EASTING: 876,333 US ft (NAD83/90)				24 HR. NA			
TOTAL DEPTH: 102.0 ft			BORING DIAMETER: 4" to 30.0', 3" to 102.0'				CASING DEPTH: 4" to 30.0'				HAMMER (ID):140 lb. Auto (MEC-03)				
DATE STARTED: 4/8/08			COMPLETED: 4/9/08			CORE SIZE: HQ3			BITS USED: 4" Roller Cone						
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	LOG	SOIL AND ROCK DESCRIPTION			
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			NO.	MOI	
-1.3					Ground Surface										
-1.3	0.0	WOR	WOR	WOR	0						627-1		-1.3	0.0	MUCK, light brownish gray (10YR6/2), to very dark brown (10YR2/2), very soft, wet, organic, trace shell fragments 2.5ft: Field notes do not indicate that sample 627-2 was split into separate jars
-3.8	2.5	4	3	5	8						627-2		-4.2	2.9	
-6.3	5.0	8	7	6	13						627-3				LIMESTONE, boundstone, pale yellow (2.5Y8/3), to light gray (2.5Y7/1), very soft, wet, trace sand, fossiliferous, strong HCl reaction, oolitic (Miami Formation) 5.0ft: pale yellow (2.5Y8/2) 7.5ft: white (2.5Y8/1), to pale yellow (2.5Y8/2) 10.0ft: pale yellow (2.5Y8/2), to light gray (2.5Y7/2) 12.5ft: white (10YR8/1) 15.0ft: white (10YR8/1), to light gray (10YR7/1), medium hard
-8.8	7.5	14	5	6	11						627-4				
-11.3	10.0	5	4	7	11						627-5				19.2ft: white (10YR8/1), to very pale brown (10YR7/3), very soft
-13.8	12.5	11	9	10	19						627-6				
-16.3	15.0	6	16	17	33						627-7				24.2ft: white (2.5Y8/1), medium hard
-20.5	19.2	4	8	4	12						627-8				
-25.5	24.2	4	20	18	38						627-9				LIMESTONE, boundstone, white (2.5Y8/1), hard, wet, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation) 30.3ft: Switch sampling method to coring 30.3ft: white (10YR8/1), hard, indurated, fossiliferous, trace recrystallized calcite, coralline, strong HCl reaction, few vugs 33.0ft: white (10YR8/1), to light gray (2.5Y7/1), medium hard to hard
-30.5	29.2	6	49	50/0.1	99/0.6						627-10		-28.3	27.0	
-31.6	30.3										RUN-1				38.0ft: white (2.5Y8/1), hard
-34.3	33.0										RUN-2				
-39.3	38.0										RUN-3				43.0ft: white (2.5Y8/1) to 46.0ft then gray (2.5Y6/1) to 47.5ft
-44.3	43.0										RUN-4				
-49.3	48.0										RUN-5		-48.8	47.5	LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, trace vugs, trace shell molds and cast, strong HCl reaction (Lower Fort Thompson Formation) 48.0ft: trace shell molds and casts 53.0ft: white (10YR8/1), moderately hard, sandy, trace to few shell molds and casts
-54.3	53.0										RUN-6				
-59.3	58.0										RUN-7				58.0ft: hard
-64.3	63.0										RUN-8				
-69.3	68.0										RUN-9				63.0ft: white (2.5Y8/1), soft to medium hard, moderately indurated
-74.3	73.0										RUN-10				
															68.0 to 71.0ft: fine grained sand, white (10YR8/1), to light gray (10YR7/1), unconsolidated, strong HCl reaction 71.0ft: LIMESTONE, boundstone, light gray (10YR7/1), medium hard, moderately indurated, sandy, strong HCl reaction

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GJT 5/30/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: L. Bisson						
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (ATL)			DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft)						
BORING NO.: B-627			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA						
GROUND ELEV.: -1.3 ft (NAVD88)			NORTHING: 396,835 US ft (NAD83/90)			EASTING: 876,333 US ft (NAD83/90)			24 HR. NA						
TOTAL DEPTH: 102.0 ft			BORING DIAMETER: 4" to 30.0', 3" to 102.0'			CASING DEPTH: 4" to 30.0'			HAMMER (ID): 140 lb. Auto (MEC-03)						
DATE STARTED: 4/8/08			COMPLETED: 4/9/08			CORE SIZE: HQ3			BITS USED: 4" Roller Cone						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-76.1					Continued from previous page										
-79.3	78.0										RUN-11		73.0ft: soft to medium hard, and possible thin sand lenses LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, trace vugs, trace shell molds and cast, strong HCl reaction (Lower Fort Thompson Formation) (continued) 78.0ft: white (10YR8/1), to light gray (10YR7/1), medium hard to moderately hard, moderately indurated to indurated, sandy, trace to few shell molds and casts 83.0ft: moderately indurated 88.0ft: white (2.5Y8/1), hard, indurated 93.0ft: medium hard to hard, moderately indurated 98.0ft: moderately hard, moderately indurated		
-84.3	83.0										RUN-12				
-89.3	88.0										RUN-13				
-94.3	93.0										RUN-14				
-99.3	98.0										RUN-15				
													-103.3	102.0	Boring Terminated at Elevation -103.3 ft

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5 30:08



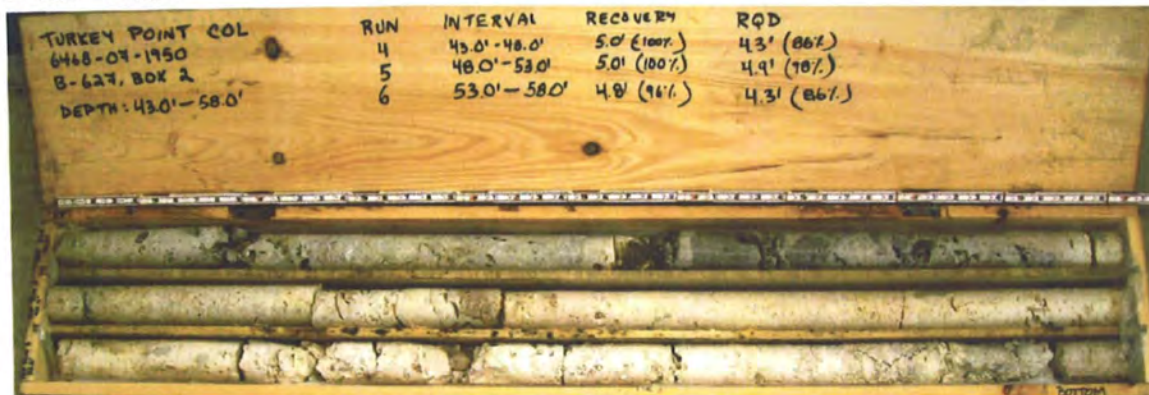
SHEET 1 OF 1

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: L. Bisson			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)	
BORING NO.: B-627				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.3 ft (NAVD88)				NORTHING: 396,835 US ft (NAD83/90)				EASTING: 876,333 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 102.0 ft				CASING DEPTH: 4" to 30.0'						HAMMER (ID): 140 lb. Auto (MEC-03)			
DATE STARTED: 4/8/08		COMPLETED: 4/9/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS			
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %					
Begin Coring @ 30.3 ft													
-31.6	30.3	2.7	1:52	(2.7)	(2.6)	RUN-1	(16.1)	(13.3)		LIMESTONE, boundstone, white (2.5Y8/1), hard, wet, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation) (continued) 30.3ft: white (10YR8/1), hard, indurated, fossiliferous, trace recrystallized calcite, coralline, strong HCl reaction, few vugs 33.0ft: white (10YR8/1), to light gray (2.5Y7/1), medium hard to hard			
-34.3	33.0		1:42	100%	96%		94%	77%					
		5.0	1:26/0.7	(4.5)	(2.8)	RUN-2				38.0ft: white (2.5Y8/1), hard			
			2:15	90%	56%								
-39.3	38.0		1:30							43.0ft: white (2.5Y8/1) to 46.0ft then gray (2.5Y6/1) to 47.5ft			
		5.0	1:35										
			1:22							48.0ft: trace shell molds and casts			
		5.0	0:56	(4.4)	(4.2)	RUN-3							
-44.3	43.0		1:46	88%	84%					53.0ft: white (10YR8/1), moderately hard, sandy, trace to few shell molds and casts			
		5.0	1:27										
			1:41							58.0ft: hard			
		5.0	1:51										
-49.3	48.0		1:35	(5.0)	(4.3)	RUN-4				63.0ft: white (2.5Y8/1), soft to medium hard, moderately indurated			
		5.0	1:35	100%	86%								
			2:25							68.0 to 71.0ft: fine grained sand, white (10YR8/1), to light gray (10YR7/1), unconsolidated, strong HCl reaction			
		5.0	1:57	(5.0)	(4.9)	RUN-5	(42.7)	(26.3)					
-54.3	53.0		2:17	100%	98%		78%	48%		71.0ft: LIMESTONE, boundstone, light gray (10YR7/1), medium hard, moderately indurated, sandy, strong HCl reaction			
		5.0	1:55										
			1:12	(4.8)	(4.3)	RUN-6				73.0ft: soft to medium hard, and possible thin sand lenses			
		5.0	0:48	96%	86%								
-59.3	58.0		1:12							78.0ft: white (10YR8/1), to light gray (10YR7/1), medium hard to moderately hard, moderately indurated to indurated, sandy, trace to few shell molds and casts			
		5.0	2:07	(5.0)	(3.4)	RUN-7							
			1:04							83.0ft: moderately indurated			
		5.0	1:07										
-64.3	63.0		0:53	(3.2)	(0.0)	RUN-8				88.0ft: white (2.5Y8/1), hard, indurated			
		5.0	1:34	64%	0%								
			2:12							93.0ft: medium hard to hard, moderately indurated			
		5.0	1:22										
-69.3	68.0		0:47	(2.5)	(0.5)	RUN-9				98.0ft: moderately hard, moderately indurated			
		5.0	0:21	50%	10%								
			0:04							Coring Terminated at Elevation -103.3			
		5.0	0:08	(1.3)	(0.4)	RUN-10							
-74.3	73.0		0:22							Coring Terminated at Elevation -103.3			
		5.0	0:16	(4.3)	(2.5)	RUN-11							
-79.3	78.0		0:08	86%	50%					Coring Terminated at Elevation -103.3			
		5.0	0:58										
			1:07							Coring Terminated at Elevation -103.3			
		5.0	1:25	(4.0)	(2.2)	RUN-12							
-84.3	83.0		0:59	80%	44%					Coring Terminated at Elevation -103.3			
		5.0	1:02										
			1:43							Coring Terminated at Elevation -103.3			
		5.0	0:06	(5.0)	(4.0)	RUN-13							
-89.3	88.0		0:26	100%	80%					Coring Terminated at Elevation -103.3			
		5.0	1:55										
			2:45							Coring Terminated at Elevation -103.3			
		5.0	1:01	(3.3)	(2.0)	RUN-14							
-94.3	93.0		1:13	66%	40%					Coring Terminated at Elevation -103.3			
		5.0	1:15										
			1:13							Coring Terminated at Elevation -103.3			
-99.3	98.0		0:41	(3.8)	(1.6)	RUN-15							
		4.0	0:53	95%	40%					Coring Terminated at Elevation -103.3			
			0:37										
-103.3	102.0		0:49							Coring Terminated at Elevation -103.3			
			0:32										
Coring Terminated at Elevation -103.3													

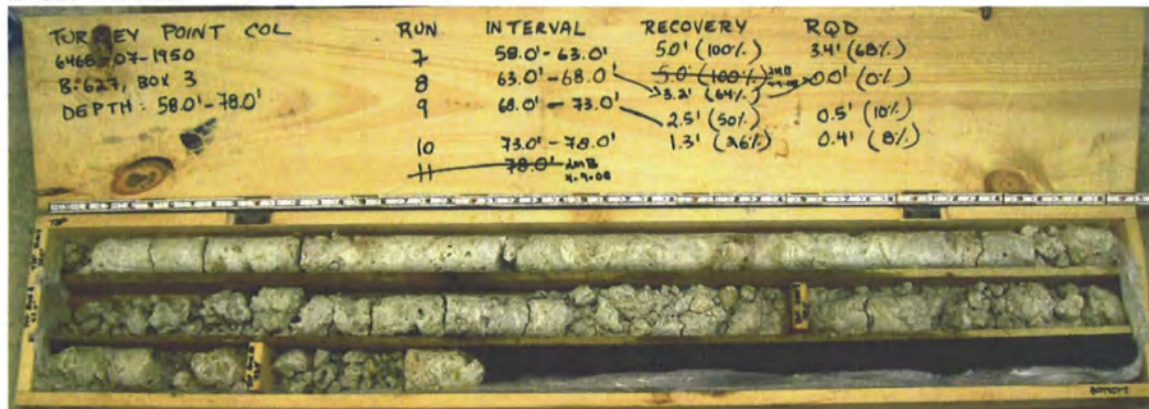
TURKEY POINT COL CORE TURKEY POINT GP TURKEY POINT COL GDT 530.08



B-627 - Box 1



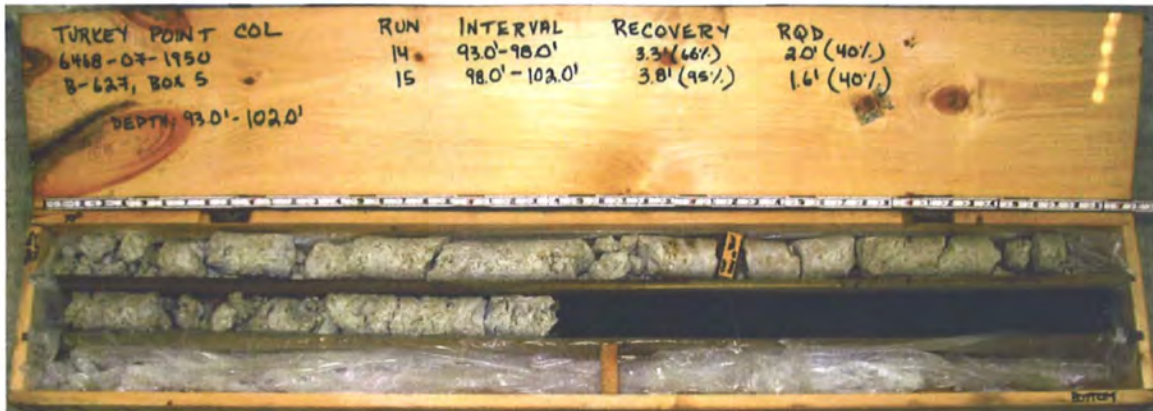
B-627 - Box 2



B-627 - Box 3



B-627 - Box 4



B-627 - Box 5



GEOTECHNICAL BORING LOG

Prepared By PPK Date 8-19-08Checked By SSZ Date 8/19/08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: R. Clark		
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-750 (Miller)					DRILLER: G.Bilbrey/P.McKorkle/J.Tucker			GROUND WATER (ft)		
BORING NO.: B-628					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core			0 HR. NA		
GROUND ELEV.: -1.5 ft (NAVD88)					NORTHING: 397,073 US ft (NAD83/90)					EASTING: 876,473 US ft (NAD83/90)			24 HR. NA		
TOTAL DEPTH: 127.9 ft			BORING DIAMETER: 4" to 36.0', 3" to 127.9'					CASING DEPTH: 4" to 36.0', 3" to 118.0'					HAMMER (ID):140 lb. Auto (07)		
DATE STARTED: 2/19/08			COMPLETED: 2/21/08			CORE SIZE: HQ3			BITS USED: 2 15/16" & 3 7/8" Tricones						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-1.5					Ground Surface										
-1.5	0.0	WOH	WOH	WOH	0						628-1		-1.5	MUCK, light brownish gray (10YR6/2), very soft to soft, wet, strong HCl reaction, mostly organic, shells fragments	0.0
-4.3	2.8				12						628-2A&B		-5.3		3.8
-6.8	5.3	WOH	4	8							628-3			LIMESTONE, boundstone, pale yellow (5Y8/3), very soft, wet, strong HCl reaction, fossiliferous (Miami Formation)	
-9.3	7.8	10	9	7	16						628-4			7.8ft: friable, with clasts or infilled voids	
-11.7	10.2	5	10	2	12						628-5			10.2ft: soft	
-14.2	12.7	6	5	23	28						628-6			12.7ft: medium hard	
-16.6	15.1	19	24	10	34						628-7				
-19.8	18.3	15	19	17	36						628-8			18.3ft: very soft	
		2	2	3	5										
-24.8	23.3	4	12	20	32						628-9		-25.5	LIMESTONE, boundstone, pale yellow (5Y8/2), medium hard, wet, friable, porous, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation)	24.0
-29.5	28.0	17	13	28	41						628-10				
-34.5	33.0	10	20	50/0.2							628-11			33.0ft: hard, coralline	
-37.5	36.0										RUN-1			36.0ft: Switch sampling method to coring 36.0ft: white (2.5Y8/1), hard, indurated, fossiliferous, little vugs lined with recrystallized calcite, strong HCl reaction	
-42.5	41.0										RUN-2			39.0ft: loss of circulation 41.0ft: pale yellow (5Y8/3)	
-47.5	46.0										RUN-3		-49.9	46.0ft: pale yellow (5Y8/3) to 46.4ft then light gray (N7/) to 48.4ft	48.4
-52.5	51.0										RUN-4			LIMESTONE, boundstone, white (5Y8/1), hard, indurated, porous, few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)	
-57.5	56.0										RUN-5			56.0ft: moderately hard, moderately indurated, trace sand lenses	
-62.5	61.0										RUN-6			61.0ft: medium to moderately hard, friable to moderately indurated, few shell molds	
-67.5	66.0										RUN-7			66.0ft: moderately indurated to indurated	
-72.5	71.0										RUN-8				

TURKEY POINT COL BORE TURKEY POINT COL GDT 8/18/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)	
BORING NO.: B-628				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 397,073 US ft (NAD83/90)				EASTING: 876,473 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 127.9 ft		BORING DIAMETER: 4" to 36.0', 3" to 127.9'				CASING DEPTH: 4" to 36.0', 3" to 118.0'				HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 2/19/08		COMPLETED: 2/21/08				CORE SIZE: HQ3				BITS USED: 2 15/16" & 3 7/8" Tricones			
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-76.3					Continued from previous page								
-77.5	76.0												LIMESTONE, boundstone, white (5Y8/1), hard, indurated, porous, few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued) 75.0ft: some circulation returned
-82.5	81.0												81.0ft: moderately hard to hard, moderately indurated to indurated, little vugs
-87.5	86.0												86.0ft: fine to medium grained calcareous sand lenses
-92.5	91.0												91.0ft: medium hard, friable to moderately indurated, some vugs filled with calcareous medium grained sand
-97.5	96.0												96.0ft: moderately hard, indurated
-102.5	101.0												101ft: hard, indurated, shell molds and casts
-107.5	106.0												
-112.5	111.0												
-117.5	116.0												
		7	7	4									116.0ft: Switch sampling method to SPT
-122.9	121.4												Silty SAND (SM), light greenish gray (10YR8/1), medium dense, wet, strong HCl reaction, fine grained sand
		5	5	6									
-127.9	126.4												126.4ft: loose
		3	2	3									Boring Terminated at Elevation -129.4 ft

TURKEY POINT COL BORE, TURKEY POINT GPJ, TURKEY POINT COL GDT, 8/18/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)	
BORING NO.: B-628				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 397,073 US ft (NAD83/90)				EASTING: 876,473		US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 127.9 ft				CASING DEPTH: 4" to 36.0', 3" to 118.0'						HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 2/19/08		COMPLETED: 2/21/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
												Begin Coring @ 36.0 ft	
-37.5	36.0	5.0	1:06 0:43 1:28 2:07	(5.0) 100%	(4.5) 90%	RUN-1	(12.4) 100%	(11.9) 96%				LIMESTONE, boundstone, pale yellow (5Y8/2), medium hard, wet, friable, porous, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation) (continued) 36.0ft: white (2.5Y8/1), hard, indurated, fossiliferous, little vugs lined with recrystallized calcite, strong HCl reaction	
-42.5	41.0	5.0	2:02 1:16 1:56 1:36 1:33	(5.0) 100%	(5.0) 100%	RUN-2						39.0ft: loss of circulation 41.0ft: pale yellow (5Y8/3) 46.0ft: pale yellow (5Y8/3) to 46.4ft then light gray (N7/) to 48.4ft	
-47.5	46.0	5.0	1:14 2:11 3:05 3:36 3:26	(5.0) 100%	(5.0) 100%	RUN-3						48.4	
-52.5	51.0	5.0	2:02 1:33 2:36 2:14 1:28	(5.0) 100%	(5.0) 100%	RUN-4	(44.8) 66%	(32.7) 48%				LIMESTONE, boundstone, white (5Y8/1), hard, indurated, porous, few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)	
-57.5	56.0	5.0	2:21 2:33 1:05 0:45 2:05	(4.6) 92%	(4.2) 84%	RUN-5						56.0ft: moderately hard, moderately indurated, trace sand lenses	
-62.5	61.0	5.0	1:14 1:22 1:05 0:52 0:29	(3.2) 64%	(2.3) 46%	RUN-6						61.0ft: medium to moderately hard, friable to moderately indurated, few shell molds	
-67.5	66.0	5.0	1:20 0:33 0:21 0:33 1:40	(2.8) 56%	(1.2) 24%	RUN-7						66.0ft: moderately indurated to indurated	
-72.5	71.0	5.0	0:52 0:51 1:02 0:33 1:33	(3.1) 62%	(1.4) 28%	RUN-8						75.0ft: some circulation returned	
-77.5	76.0	5.0	0:29 0:22 1:45 2:13 2:02	(1.1) 22%	(0.4) 8%	RUN-9						81.0ft: moderately hard to hard, moderately indurated to indurated, little vugs	
-82.5	81.0	5.0	0:58 0:51 2:24 0:22 0:03	(2.6) 52%	(0.9) 18%	RUN-10						86.0ft: fine to medium grained calcareous sand lenses	
-87.5	86.0	5.0	0:01 0:40 0:46 1:01 2:25	(2.2) 44%	(1.1) 22%	RUN-11						91.0ft: medium hard, friable to moderately indurated, some vugs filled with calcareous medium grained sand	
-92.5	91.0	5.0	0:52 0:32 1:31 0:44 1:11	(4.2) 84%	(3.0) 60%	RUN-12						96.0ft: moderately hard, indurated	
-97.5	96.0	5.0	1:02 1:01 0:55 1:05 1:09	(2.7) 54%	(1.8) 36%	RUN-13						101ft: hard, indurated, shell molds and casts	
-102.5	101.0	5.0	0:41 0:36 0:53 0:39 0:54	(4.2) 84%	(3.4) 68%	RUN-14							
-107.5	106.0	5.0	0:45 0:52 0:35 0:36 0:54	(5.0) 100%	(4.8) 96%	RUN-15							
-112.5	111.0												

TURKEY POINT COL CORE TURKEY POINT GPT TURKEY POINT COL GDT 8/18/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-628	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.5 ft (NAVD88)	NORTHING: 397,073 US ft (NAD83/90)	EASTING: 876,473 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 127.9 ft	CASING DEPTH: 4" to 36.0', 3" to 118.0'	HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 2/19/08	COMPLETED: 2/21/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

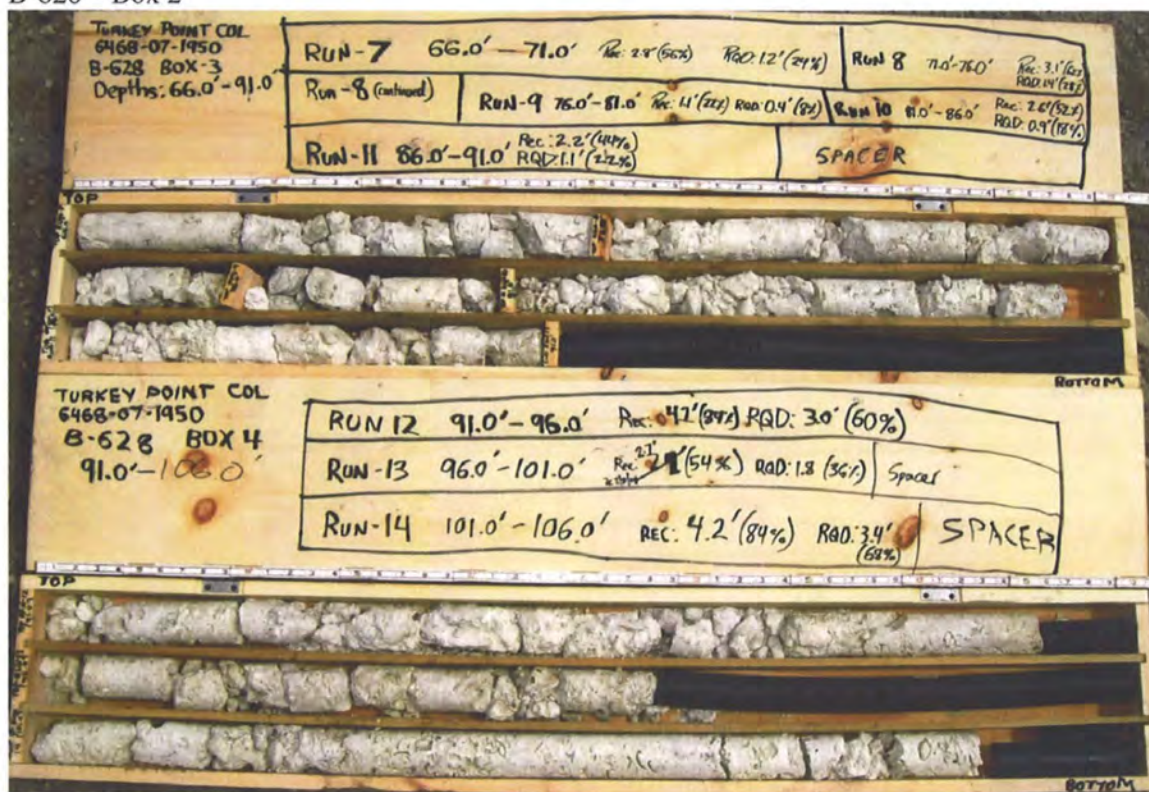
ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
		5.0	0.26 0.15 0.28 0.24 0.48	(1.5) 30%	(0.6) 12%	RUN-16				LIMESTONE, boundstone, white (5Y8/1), hard, indurated, porous, few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-117.5	116.0									-117.5 116.0
										Coring Terminated at Elevation -117.5

TURKEY POINT COL CORE TURKEY POINT COL GDT 8/18/08



B-628 - Box 1

B-628 - Box 2



B-628 - Box 3

B-628 - Box 4



B-628 - Box 5



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: L. Bisson						
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (ATL)			DRILLER: L. Carter/ J. Landeros			GROUND WATER (ft)						
BORING NO.: B-629			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA						
GROUND ELEV.: -1.1 ft (NAVD88)			NORTHING: 396,972 US ft (NAD83/90)			EASTING: 876,346 US ft (NAD83/90)			24 HR. NA						
TOTAL DEPTH: 100.3 ft			BORING DIAMETER: 4" to 35.0", 3" to 100.3'			CASING DEPTH: 4" to 35.0'			HAMMER (ID): 140 lb. Auto (MEC-03)						
DATE STARTED: 4/6/08			COMPLETED: 4/7/08			CORE SIZE: HQ3			BITS USED: 4" Roller Cone						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO	LOG	SOIL AND ROCK DESCRIPTION			
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI				
-75.9					Continued from previous page										
-79.4	78.3									RUN-11			LIMESTONE, boundstone, white (10YR8/1), medium hard to hard, indurated, fossiliferous, trace vugs, trace shell molds, strong HCl reaction (Lower Fort Thompson Formation) (continued) 78.3ft: medium hard to moderately hard, moderately indurated to indurated, trace shell molds 83.3ft: white (2.5Y8/1), hard, indurated, few shell molds and casts 88.3ft: white (10YR8/1), moderately hard 93.3ft: soft to medium hard, moderately indurated, 98.3ft: medium hard to hard		
-84.4	83.3									RUN-12					
-89.4	88.3									RUN-13					
-94.4	93.3									RUN-14					
-99.4	98.3									RUN-15					
													-101.4	100.3	Boring Terminated at Elevation -101.4 ft

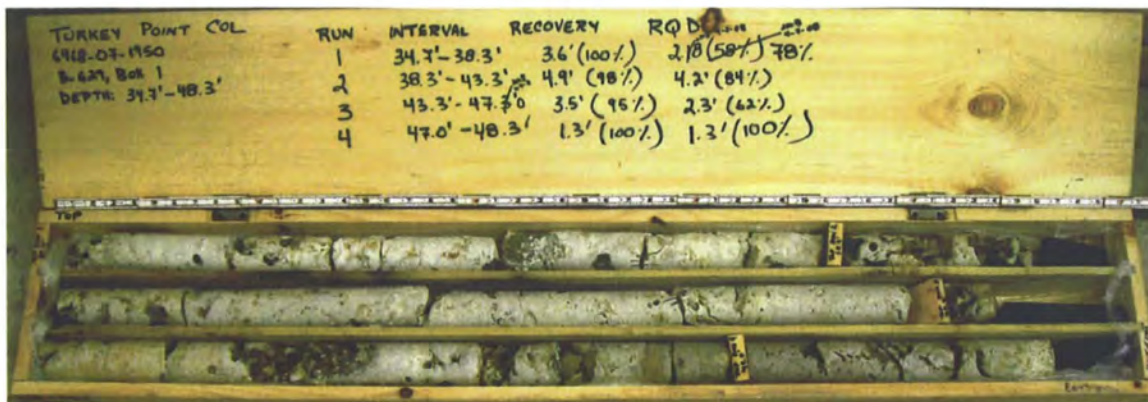
TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5 3008



SHEET 1 OF 1

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: L. Bisson			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)	
BORING NO.: B-629				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.1 ft (NAVD88)				NORTHING: 396,972 US ft (NAD83/90)				EASTING: 876,346 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 100.3 ft				CASING DEPTH: 4" to 35.0'						HAMMER (ID): 140 lb. Auto (MEC-03)			
DATE STARTED: 4/6/08		COMPLETED: 4/7/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %		RQD (ft) %	SAMP. NO	STRATA REC (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
												Begin Coring @ 34.7 ft	
-35.8	34.7	3.6	1:25 1:30 1:16	(3.6) 100%	(2.8) 78%	RUN-1	(13.3) 98%	(10.6) 78%				LIMESTONE, boundstone, white (2.5Y8/1), medium hard, wet, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation) (continued)	
-39.4	38.3	5.0	0:52/0.6 0:56 1:06 1:09 1:07 0:57	(4.9) 98%	(4.2) 84%	RUN-2						34.7ft: white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, trace vugs 38.3ft: recrystallized calcite, coralline	
-44.4	43.3	3.7	1:05 1:02 1:04	(3.5) 95%	(2.3) 62%	RUN-3						43.3ft: white (10YR8/1) to 46.3ft then gray (10YR6/1), few vugs	
-48.1	47.0	1.3	1:27/0.7 0:17/0.3 1:41	(1.3) 100%	(1.3) 100%	RUN-4						47.0ft: gray (10Y6/1) to 48.3ft	
-49.4	48.3	5.0	1:11 0:52 1:48 1:07 0:52	(4.4) 88%	(4.0) 80%	RUN-5	(43.5) 84%	(23.2) 45%				LIMESTONE, boundstone, white (10YR8/1), medium hard to hard, indurated, fossiliferous, trace vugs, trace shell molds, strong HCl reaction (Lower Fort Thompson Formation)	
-54.4	53.3	5.0	0:22 0:16 0:11 0:17 0:36	(4.7) 94%	(2.1) 42%	RUN-6						53.3ft: white (2.5Y8/1), medium hard, moderately indurated, little sand, few to little shell molds	
-59.4	58.3	5.0	0:30 1:24 0:59 1:00 1:11	(4.4) 88%	(2.6) 52%	RUN-7						58.3ft: white (10YR8/1), soft to medium hard, moderately indurated	
-64.4	63.3	5.0	0:12 0:21 0:31 0:52 0:43	(2.8) 56%	(0.6) 12%	RUN-8						63.3ft: moderately indurated to indurated	
-69.4	68.3	5.0	0:38 2:01 0:59 2:06 1:37	(4.2) 84%	(1.6) 32%	RUN-9							
-74.4	73.3	5.0	1:26 1:39 0:32 0:27 1:35	(3.3) 66%	(1.5) 30%	RUN-10						73.3ft: white (2.5Y8/1), to light gray (2.5Y7/1)	
-79.4	78.3	5.0	1:10 1:46 1:19 0:51 0:53	(5.0) 100%	(2.7) 54%	RUN-11						78.3ft: medium hard to moderately hard, moderately indurated to indurated, trace shell molds	
-84.4	83.3	5.0	0:55 0:54 0:20 0:47 1:15	(4.5) 90%	(1.5) 30%	RUN-12						83.3ft: white (2.5Y8/1), hard, indurated, few shell molds and casts	
-89.4	88.3	5.0	1:35 1:55 1:50 0:56 0:61	(5.0) 100%	(3.5) 70%	RUN-13						88.3ft: white (10YR8/1), moderately hard	
-94.4	93.3	5.0	1:17 0:37 0:19 0:27 0:08	(3.2) 64%	(1.4) 28%	RUN-14						93.3ft: soft to medium hard, moderately indurated,	
-99.4	98.3	2.0	0:20 0:33	(2.0) 100%	(1.7) 85%	RUN-15						98.3ft: medium hard to hard	
-101.4	100.3											Coring Terminated at Elevation -101.4	

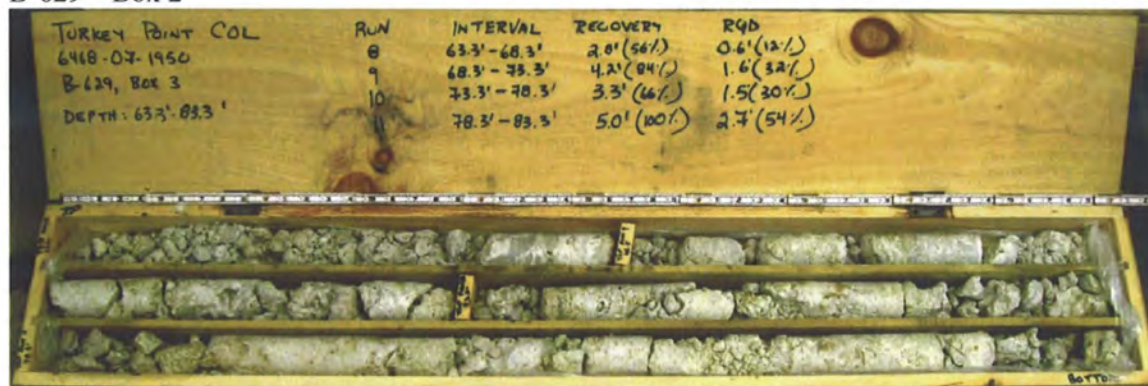
TURKEY POINT COL CORE TURKEY POINT GIP TURKEY POINT COL GDT 5/30/08



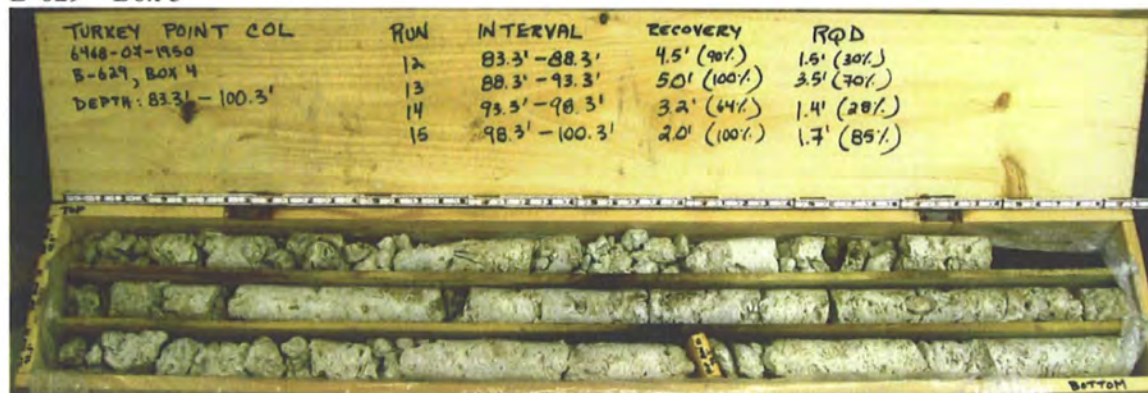
B-629 - Box 1



B-629 - Box 2



B-629 - Box 3



B-629 - Box 4



GEOTECHNICAL BORING LOG

Prepared By JMZ Date 8-19-08

Checked By SS Date 8/19/08

SHEET 1 OF 4

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: S. Woodham				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550X (ATL)					DRILLER: R. Landeros/ N. Rodriguez					GROUND WATER (ft)		
BORING NO.: B-630					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core/UD					0 HR. NA		
GROUND ELEV.: -1.5 ft (NAVD88)					NORTHING: 396,872 US ft (NAD83/90)					EASTING: 876,462 US ft (NAD83/90)					24 HR. NA		
TOTAL DEPTH: 294.0 ft			BORING DIAMETER: 6" to 108.8", 5" to 294.0'					CASING DEPTH: 4" to 26.0', 6" to 108.8'					HAMMER (ID):140 lb. Auto (MEC-05)				
DATE STARTED: 4/9/08			COMPLETED: 4/29/08			CORE SIZE: HQ3			BITS USED: 4 7/8" & 3 7/8" Roller Cones								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO	MOI	LOG	SOIL AND ROCK DESCRIPTION			
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100							
-1.5					Ground Surface												
-1.5	0.0	WOR	WOR	WOR	0						630-1		-1.5	MUCK; no recovery	0.0		
-4.7	3.2										630-2		-4.5		3.0		
-6.7	5.2	8	11	9		20					630-3			LIMESTONE, boundstone, pale yellow (5Y8/2), very soft, wet, strong HCl reaction, few fines, oolitic (Miami Formation)			
-9.4	7.9	8	10	12		22					630-4			5.2ft: soft			
-11.5	10.0	6	6	5		11					630-5			7.9ft: very soft			
-14.3	12.8	5	5	4		9					630-6						
-19.3	17.8	11	13	9		22					630-7			12.8ft: soft, fossiliferous			
-24.3	22.8	5	4	7		11					630-8			17.8ft: very soft			
-29.7	28.2	5	8	5		13					630-9		-27.5		26.0		
-30.7	29.2	50/0.4									RUN-1			LIMESTONE, boundstone, pale yellow (5Y8/2), hard, wet, strong HCl reaction (Upper Fort Thompson Formation)			
-33.9	32.4										RUN-2			29.2ft: Switch sampling method to coring			
-34.9	33.4										RUN-3			29.6ft: white (2.5YR8/1), hard, indurated, fossiliferous, strong HCl reaction, coralline, trace shell molds, few vugs			
-39.9	38.4										RUN-4			32.4ft: very hard			
-44.9	43.4										RUN-5			33.4ft: hard, recrystallized calcite			
-49.9	48.4										RUN-6			38.4ft: white (10YR8/1)			
-54.9	53.4										RUN-7			43.4ft: white (10YR8/1) to 45.1ft then gray (N5/) to 47.9ft			
-59.9	58.4										RUN-8		-49.4	LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace vugs, fossiliferous, trace shell molds, strong HCl reaction (Lower Fort Thompson Formation)	47.9		
-64.9	63.4										RUN-9			53.4ft: white (10YR8/1)			
-69.9	68.4										RUN-10			58.4ft: trace coarse grained sand			
-74.9	73.4										RUN-11						

TURKEY POINT COL BORE: TURKEY POINT GPJ TURKEY POINT COL GDT 8/19/08



SHEET 2 OF 4

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: S. Woodham							
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550X (ATL)		DRILLER: R. Landeros/ N. Rodriguez		GROUND WATER (ft)							
BORING NO.: B-630		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core/UD		0 HR. NA							
GROUND ELEV.: -1.5 ft (NAVD88)		NORTHING: 396,872 US ft (NAD83/90)		EASTING: 876,462 US ft (NAD83/90)		24 HR. NA							
TOTAL DEPTH: 294.0 ft		BORING DIAMETER: 6" to 108.8", 5" to 294.0'		CASING DEPTH: 4" to 26.0', 6" to 108.8'		HAMMER (ID): 140 lb. Auto (MEC-05)							
DATE STARTED: 4/9/08		COMPLETED: 4/29/08		CORE SIZE: HQ3		BITS USED: 4 7/8" & 3 7/8" Roller Cones							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-76.3					Continued from previous page								
-79.9	78.4										RUN-12		LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace vugs, fossiliferous, trace shell molds, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-84.9	83.4										RUN-13		83.4ft: moderately hard
-89.9	88.4										RUN-14		88.4 to 90.6ft: massive
-94.9	93.4										RUN-15		93.4ft: sandy, few vugs
-99.9	98.4										RUN-16		98.4ft: moderately hard, little to some shell molds and casts
-104.9	103.4										RUN-17		103.4ft: hard
-109.9	108.4										RUN-18		
-114.9	113.4										RUN-19		
-116.5													115.0ft: Possible Silty SAND (SM); no recovery (Tamiami Formation)
-119.9	118.4										630-UD-1		118.4ft: Switch sampling method to Pitcher barrel
													118.4ft: coarse sand with limestone fragments - recovery 1.4ft
-131.0	129.5										630-UD-2		129.5ft: Silty SAND (SM), light yellowish brown (2.5YR6/3), fine grained sand - recovery 1.2ft
-134.0	132.5										630-UD-3		132.5ft: Silty SAND (SM), greenish gray (10Y6/1), fine grained sand - recovery 1.2ft
-140.0	138.5										630-UD-4		138.6ft: Silty SAND (SM), greenish gray (10Y6/1), layers of cemented sand - recovery 2.0ft
-150.0	148.5										630-UD-5		148.5ft: no recovery

TURKEY POINT COL BORE: TURKEY POINT GPI TURKEY POINT COL GDT 8/19/08



SHEET 3 OF 4

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade				GEOLOGIST: S. Woodham			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550X (ATL)				DRILLER: R. Landeros/ N. Rodriguez				GROUND WATER (ft)			
BORING NO.: B-630				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core/UD				0 HR. NA			
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 396,872 US ft (NAD83/90)				EASTING: 876,462 US ft (NAD83/90)				24 HR. NA			
TOTAL DEPTH: 294.0 ft				BORING DIAMETER: 6" to 108.8', 5" to 294.0'				CASING DEPTH: 4" to 26.0', 6" to 108.8'				HAMMER (ID):140 lb. Auto (MEC-05)			
DATE STARTED: 4/9/08				COMPLETED: 4/29/08				CORE SIZE: HQ3				BITS USED: 4 7/8" & 3 7/8" Roller Cones			
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-151.1					Continued from previous page										
-153.0	151.5										630-UD-6			115.0ft: Possible Silty SAND (SM); no recovery (Tamiami Formation) (continued) 151.5ft: Switch sampling method to Shelby tube 151.5ft: no recovery	
-160.0	158.5										630-UD-7			158.5ft: Switch sampling method to Pitcher barrel 158.5ft: no recovery	
-163.0	161.5										630-UD-8			161.5ft: Switch sampling method to Shelby Tube	
-165.0	163.5										630-UD-9			161.5ft: Silty SAND (SM), Greenish gray (10Y6/1), fine grained sand - recovery 1.1ft 163.5ft: no recovery	
-170.0	168.5										630-UD-10			168.5ft: Switch sampling method to Osterberg	
-173.0	171.5										630-UD-11			Silty SAND (SM), Greenish gray (10Y6/1), fine grained sand - recovery 1.1ft 171.5ft: Silty SAND (SM), Greenish gray (10Y6/1), fine grained sand - recovery 0.7ft	
-180.0	178.5										630-UD-12		-180.0	178.5ft: Sandy SILT (ML), Greenish gray (10Y6/1), fine to medium grained sand - recovery 1.5ft	
-190.0	188.5										630-UD-13		-190.0	188.5ft: Silty SAND (SM), Greenish gray (10Y6/1), fine grained sand - recovery 1.0ft	
-193.0	191.5										630-UD-14			191.5ft: Silty SAND (SM), Greenish gray (10Y6/1), fine grained sand - recovery 1.8ft	
-204.5	203.0										630-UD-15			203.0ft: Silty SAND (SM), Greenish gray (10Y6/1), fine grained sand - recovery 1.5ft	
-210.0	208.5										630-UD-16			208.5ft: Silty SAND (SM), Greenish gray (10Y6/1), fine grained sand - recovery 1.9ft	
-220.0	218.5										630-UD-17		-216.5	215.0ft: Hawthorn Group	
-223.0	221.5										630-UD-18			218.5ft: Silty SAND (SM), Greenish gray (10Y6/1), fine grained sand - recovery 0.3ft	
-225.5	224.0													221.5ft: Silty SAND (SM), Greenish gray (10Y6/1), fine grained sand - recovery 0.6ft	

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 8 19 08



SHEET 4 OF 4

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade				GEOLOGIST: S. Woodham			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550X (ATL)				DRILLER: R. Landeros/ N. Rodriguez				GROUND WATER (ft)			
BORING NO.: B-630				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core/UD				0 HR. NA			
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 396,872 US ft (NAD83/90)				EASTING: 876,462 US ft (NAD83/90)				24 HR. NA			
TOTAL DEPTH: 294.0 ft				BORING DIAMETER: 6" to 108.8', 5" to 294.0'				CASING DEPTH: 4" to 26.0', 6" to 108.8'				HAMMER (ID): 140 lb. Auto (MEC-05)			
DATE STARTED: 4/9/08				COMPLETED: 4/29/08				CORE SIZE: HQ3				BITS USED: 4 7/8" & 3 7/8" Roller Cones			
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT						SAMP.	LOG	SOIL AND ROCK DESCRIPTION		
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO.				
-225.9					Continued from previous page										
-227.0	225.5	9	8	19							630-10			215.0ft: Hawthorn Group (continued)	
-228.5	227.0	9	50/0.5								630-11			224.5ft: Switch sampling method to SPT	
-230.0	228.5	48	50/0.3								630-12			Silty SAND (SM), light greenish gray (10Y7/1),	
											630-UD-19			medium dense, moist, fine grained sand, few	
														finer, strong HCl reaction	
														225.5ft: very dense	
														228.5ft: Switch sampling method to Pitcher	
														barrel	
														Silty SAND (SM), greenish gray (5GY5/1), fine	
														grained sand - recovery 1.9ft	
														231.0ft: dark greenish gray (10Y4/1)	
-240.0	238.5										630-UD-20			238.5ft: Switch sampling method to Osterberg	
-243.0	241.5										630-UD-21			238.5ft: SAND with silt (SP-SM), greenish gray	
														(10Y6/1), fine grained sand - recovery 0.4ft	
														241.5ft: Switch sampling method to Pitcher	
														barrel	
														241.5ft: SAND with silt (SP-SM), light greenish	
														gray (10Y7/1), fine grained sand - recovery	
														1.4ft	
-250.0	248.5										630-UD-22			248.5ft: SAND with silt (SP-SM), light greenish	
														gray (10Y6/1), fine grained sand - recovery	
														2.5ft	
-260.0	258.5										630-UD-23			258.5ft: Silty SAND (SM), dark greenish gray	
														(10Y4/1), fine grained sand - recovery 2.5	
-270.0	268.5										630-UD-24			268.5: Silty SAND (SM), dark greenish gray	
														(5GY4/1), fine grained sand - recovery 2.5ft	
-280.0	278.5										630-UD-25			278.5ft: Silty SAND (SM), dark greenish gray	
														(5GY4/1), fine grained sand - recovery 2.5	
-290.0	288.5										630-UD-26			288.5ft: Silty SAND (SM), dark greenish gray	
-293.0	291.5										630-UD-27			(10Y4/1), fine grained sand - recovery 0.7ft	
														291.5ft: Silty SAND (SM), dark greenish gray	
														(10Y4/1), fine grained sand - recovery 0.8	
														Boring Terminated at Elevation -295.5 ft	

TURKEY POINT COL BORE TURKEY POINT COL GDT 8-19-08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: S. Woodham			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550X (ATL)				DRILLER: R. Landeros/ N. Rodriguez				GROUND WATER (ft) 0 HR. NA 24 HR. NA	
BORING NO.: B-630				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core/UD					
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 396,872 US ft (NAD83/90)				EASTING: 876,462		US ft (NAD83/90)		HAMMER (ID): 140 lb. Auto (MEC-05)	
TOTAL DEPTH: 294.0 ft				CASING DEPTH: 4" to 26.0', 6" to 108.8'									
DATE STARTED: 4/9/08		COMPLETED: 4/29/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) % RQD (ft) %		SAMP. NO.	STRATA REC (ft) % RQD (ft) %		L O G	DESCRIPTION AND REMARKS			
										Begin Coring @ 29.2 ft			
-30.7	29.2	3.2	0:16 0:56	(3.0) 94%	(2.2) 69%	RUN-1	(17.4) 93%	(11.8) 63%		LIMESTONE, boundstone, pale yellow (5Y8/2), hard, wet, strong HCl reaction (Upper Fort Thompson Formation) (continued) 29.6ft: white (2.5YR8/1), hard, indurated, fossiliferous, strong HCl reaction, coralline, trace shell molds, few vugs 32.4ft: very hard 33.4ft: hard, recrystallized calcite			
-33.9	32.4		0:55/1.2										
-34.9	33.4	1.0	0:49	(1.0) 100%	(0.8) 80%	RUN-2							
		5.0	1:17 1:30 1:05 1:24 2:00	(5.0) 100%	(3.5) 70%	RUN-3							
-39.9	38.4												
		5.0	1:29 1:50 0:49 1:27 1:04	(3.9) 78%	(2.8) 56%	RUN-4				38.4ft: white (10YR8/1)			
-44.9	43.4												
		5.0	1:52 1:09 1:08 1:24 2:10	(4.7) 94%	(2.7) 54%	RUN-5				43.4ft: white (10YR8/1) to 45.1ft then gray (N5/) to 47.9ft			
-49.9	48.4												
		5.0	0:55 1:20 1:52 1:48 1:08	(5.0) 100%	(4.2) 84%	RUN-6	(48.0) 72%	(29.8) 44%	-49.4	LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace vugs, fossiliferous, trace shell molds, strong HCl reaction (Lower Fort Thompson Formation)			
-54.9	53.4												
		5.0	1:01 1:06 0:35 0:32 0:22	(4.8) 96%	(4.0) 80%	RUN-7				53.4ft: white (10YR8/1)			
-59.9	58.4												
		5.0	0:27 0:20 0:32 0:40 0:26	(3.8) 76%	(2.2) 44%	RUN-8				58.4ft: trace coarse grained sand			
-64.9	63.4												
		5.0	0:41 0:39 0:52 1:05 0:52	(2.1) 42%	(0.0) 0%	RUN-9							
-69.9	68.4												
		5.0	0:18 0:44 0:45 0:33 0:34	(3.7) 74%	(1.5) 30%	RUN-10							
-74.9	73.4												
		5.0	0:47 0:49 1:13 0:57 0:25	(3.6) 72%	(2.2) 44%	RUN-11							
-79.9	78.4												
		5.0	0:41 0:39 0:26 0:21 0:28	(2.4) 48%	(1.1) 22%	RUN-12							
-84.9	83.4												
		5.0	0:50 0:23 0:11 0:20 0:23	(1.4) 28%	(0.4) 8%	RUN-13				83.4ft: moderately hard			
-89.9	88.4												
		5.0	0:48 0:50 0:40 0:32 0:38	(3.6) 72%	(2.0) 40%	RUN-14				88.4 to 90.6ft: massive			
-94.9	93.4												
		5.0	0:28 0:34 0:39 0:32 0:38	(5.0) 100%	(4.2) 84%	RUN-15				93.4ft: sandy, few vugs			
-99.9	98.4												
		5.0	0:30 0:19 0:32 0:25 0:25	(3.0) 60%	(0.8) 16%	RUN-16				98.4ft: moderately hard, little to some shell molds and casts			
-104.9	103.4												

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08

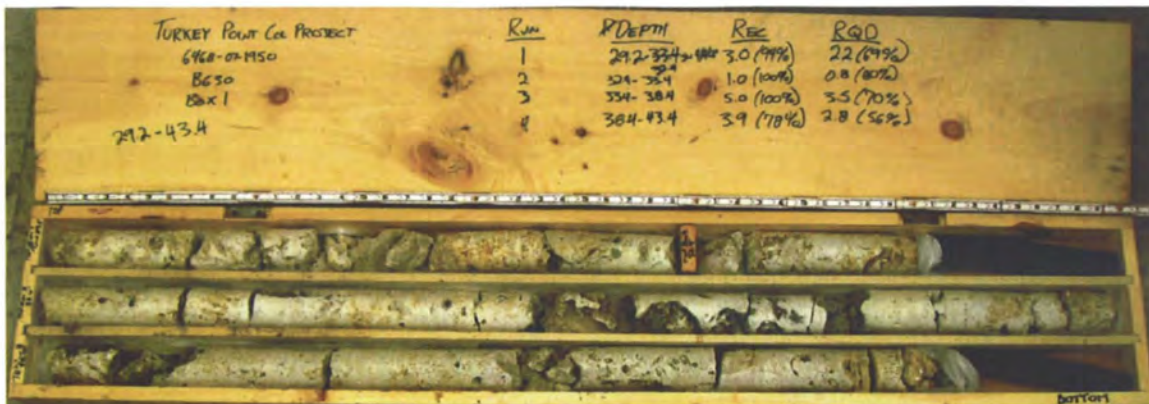


SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: S. Woodham	
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550X (ATL)				DRILLER: R. Landeros/ N. Rodriguez		GROUND WATER (ft)	
BORING NO.: B-630				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core/UD		0 HR. NA	
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 396,872 US ft (NAD83/90)				EASTING: 876,462 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 294.0 ft				CASING DEPTH: 4" to 26.0', 6" to 108.8'						HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 4/9/08			COMPLETED: 4/29/08			CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)			

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-109.9	108.4	5.0	0.23 0.23 0.25 0.26 0.23	(5.0) 100%	(4.4) 88%	RUN-17				103.4ft: hard LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, trace vugs, fossiliferous, trace shell molds, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-114.9	113.4	5.0	0.21 0.24 0.47 0.33 0.53	(3.9) 78%	(2.2) 44%	RUN-18				
-119.9	118.4	5.0	0.25 0.22 0.15 0.15 0.18	(0.5) 10%	(0.4) 8%	RUN-19	(0.0) 0%	(NA)		-116.5 ----- 115.0 115.0ft: Possible Silty SAND (SM): no recovery (Tamiami Formation) ----- 118.4 Coring Terminated at Elevation -119.9

TURKEY POINT COL CORE: TURKEY POINT.GPJ TURKEY POINT COL.GDT: 5/30/08



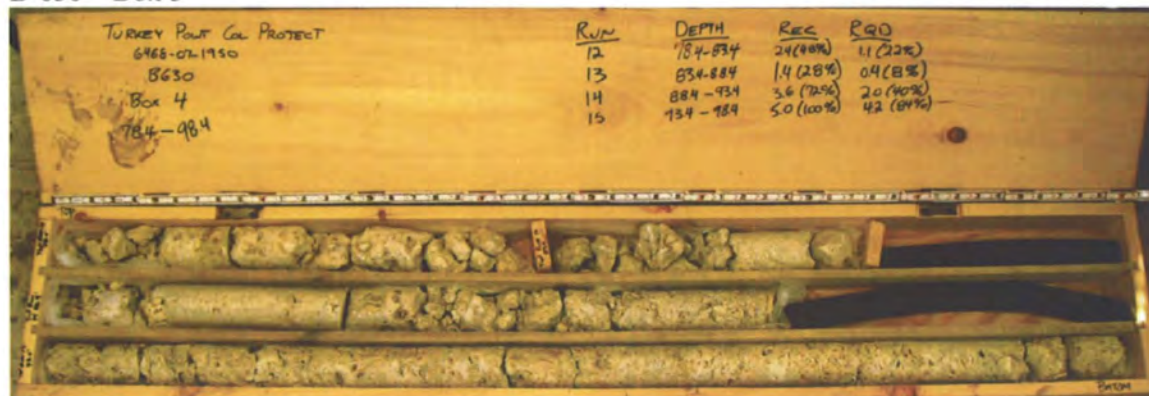
B-630 - Box 1



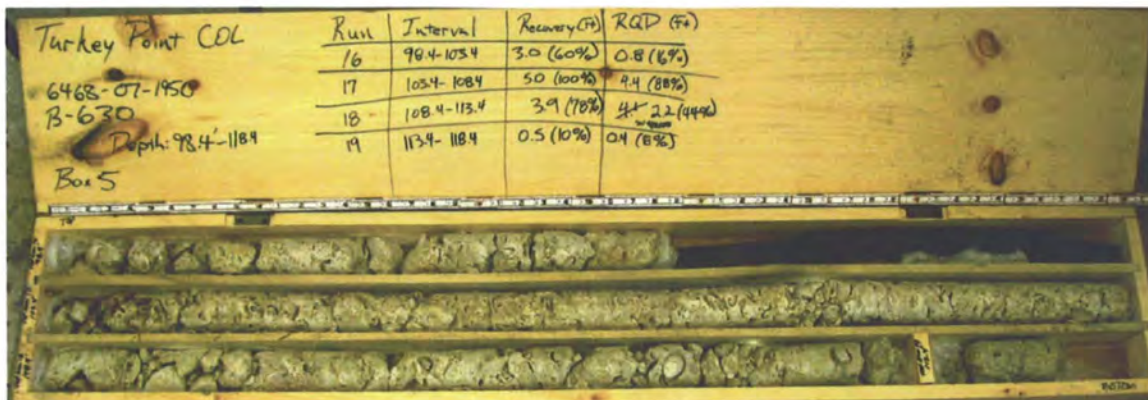
B-630 - Box 2



B-630 - Box 3



B-630 - Box 4



B-630 - Box 5



GEOTECHNICAL BORING LOG

Prepared By Tom Date 5-30-08Checked By Mike Date 5-30-08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: J. Liles							
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550 (Miller)		DRILLER: R. White/ J. Dugger/ C. White		GROUND WATER (ft)							
BORING NO.: B-631		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA							
GROUND ELEV.: -1.2 ft (NAVD88)		NORTHING: 396,655 US ft (NAD83/90)		EASTING: 876,514 US ft (NAD83/90)		24 HR. NA							
TOTAL DEPTH: 100.8 ft		BORING DIAMETER: 4" to 33.5', 3" to 100.8'		CASING DEPTH: 4" to 33.5'		HAMMER (ID): 140 lb. Auto (M06)							
DATE STARTED: 4/30/08		COMPLETED: 5/2/08		CORE SIZE: HQ3		BITS USED: 2 7/8" Roller Cone							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-1.2	0.0	WOH	WOH	WOH	Ground Surface					631-1		-1.2	0.0
-3.8	2.6	WOH	1	6						631-2A&B		-4.8	3.6
-6.2	5.0	5	10	9						631-3			
-8.6	7.4	6	7	6						631-4			
-11.2	10.0	3	9	5						631-5			
-13.6	12.4	42	25	12						631-6		12.4ft: medium hard	
-16.1	14.9	14	11	8						631-7		14.9ft: very soft, trace fine grained sand	
-23.0	21.8	7	7	9						631-8			
-28.0	26.8	41	40	25						631-9		-26.2	25.0
-33.0	31.8	11	14	16						631-10		LIMESTONE, boundstone, white (2.5Y8/1), hard, wet, trace fine grained sand, strong HCl reaction (Upper Fort Thompson Formation)	
-35.5	34.3	17	40	33						631-11		31.8ft: soft	
-37.0	35.8									RUN-1		34.3ft: hard	
-42.0	40.8									RUN-2		35.8ft: Switched sample method to coring	
-47.0	45.8									RUN-3		35.8ft: (2.5Y8/1), hard, indurated, strong HCl reaction, fossiliferous	
-52.0	50.8									RUN-4		40.8ft: recrystallized calcite, coralline	
-57.0	55.8									RUN-5		45.8ft: light gray (10YR7/1) to 48.4ft, moderately hard to hard, moderately indurated to indurated	48.4
-62.0	60.8									RUN-6		LIMESTONE, boundstone, white (2.5Y8/1), moderately hard to hard, moderately indurated to indurated, little vugs, fossiliferous, trace shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation)	
-67.0	65.8									RUN-7		50.8ft: medium hard to moderately hard, friable to moderately indurated, few vugs	
-72.0	70.8									RUN-8		55.8ft: moderately hard to hard, moderately indurated to indurated	

TURKEY POINT COL BORE TURKEY POINT COL GDT 5/30/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: J. Liles									
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550 (Miller)		DRILLER: R. White/ J. Dugger/ C. White		GROUND WATER (ft)									
BORING NO.: B-631		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA									
GROUND ELEV.: -1.2 ft (NAVD88)		NORTHING: 396,655 US ft (NAD83/90)		EASTING: 876,514 US ft (NAD83/90)		24 HR. NA									
TOTAL DEPTH: 100.8 ft		BORING DIAMETER: 4" to 33.5', 3" to 100.8'		CASING DEPTH: 4" to 33.5'		HAMMER (ID): 140 lb. Auto (M06)									
DATE STARTED: 4/30/08		COMPLETED: 5/2/08		CORE SIZE: HQ3		BITS USED: 2 7/8" Roller Cone									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-76.0					Continued from previous page										
-77.0	75.8										RUN-9		LIMESTONE, boundstone, white (2.5Y8/1), moderately hard to hard, moderately indurated to indurated, little vugs, fossiliferous, trace shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) (continued)		
-82.0	80.8										RUN-10				
-87.0	85.8										631-12		-85.0	83.8	POORLY GRADED SAND (SP), white (2.5Y8/1), wet, fine grained sand, strong HCl reaction
-88.3	87.1	2	34	50/0.3	84/0.8						RUN-11		-87.5	86.3	
-92.0	90.8										RUN-12		LIMESTONE, boundstone, white (2.5Y8/1), moderately hard to hard, moderately indurated to indurated, strong HCl reaction, trace fine sand, few vugs		
-97.0	95.8										RUN-13		90.8ft: hard, indurated		
													95.8ft: moderately hard to hard, friable to indurated, trace shell molds and casts		
													-102.0	100.8	Boring Terminated at Elevation -102.0 ft

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



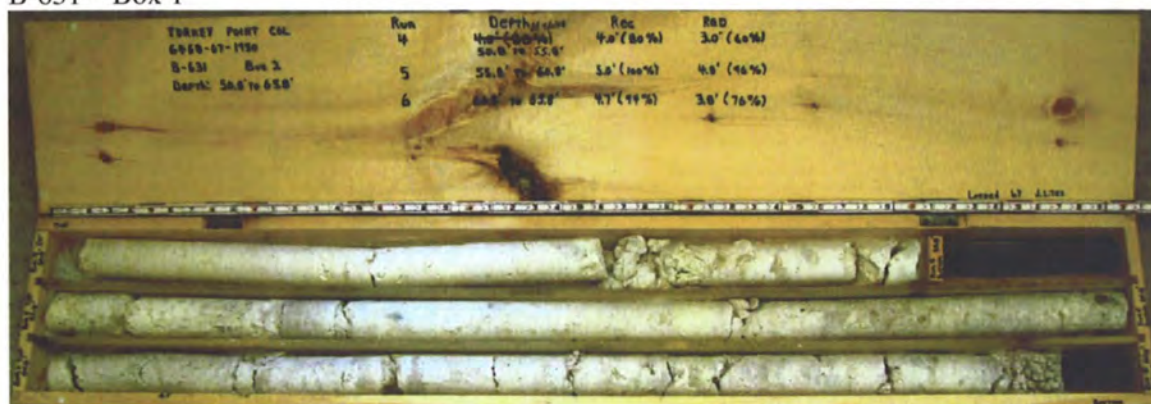
SHEET 1 OF 1

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: J. Liles			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (Miller)				DRILLER: R. White/ J. Dugger/ C. White				GROUND WATER (ft)	
BORING NO.: B-631				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.2 ft (NAVD88)				NORTHING: 396,655 US ft (NAD83/90)				EASTING: 876,514 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 100.8 ft				CASING DEPTH: 4" to 33.5'						HAMMER (ID): 140 lb. Auto (M06)			
DATE STARTED: 4/30/08		COMPLETED: 5/2/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
												Begin Coring @ 35.8 ft	
-37.0	35.8	5.0	1:39 1:35 2:37 2:58 2:46	(1.0) 20%	(0.0) 0%	RUN-1	(8.5) 67%	(6.3) 50%				LIMESTONE, boundstone, white (2.5Y8/1), hard, wet, trace fine grained sand, strong HCl reaction (Upper Fort Thompson Formation) (continued) 35.8ft: (2.5Y8/1), hard, indurated, strong HCl reaction, fossiliferous	
-42.0	40.8	5.0	2:09 1:36 1:33 1:49 2:01	(4.9) 98%	(4.9) 98%	RUN-2						40.8ft: recrystallized calcite, coralline	
-47.0	45.8	5.0	1:36 2:28 1:54 2:06 1:27	(5.0) 100%	(3.8) 76%	RUN-3						45.8ft: light gray (10YR7/1) to 48.4ft, moderately hard to hard, moderately indurated to indurated	
-52.0	50.8	5.0	2:11 1:39 0:31 0:47 1:14	(4.0) 80%	(3.0) 60%	RUN-4	(28.3) 80%	(17.6) 50%				LIMESTONE, boundstone, white (2.5Y8/1), moderately hard to hard, moderately indurated to indurated, little vugs, fossiliferous, trace shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) 50.8ft: medium hard to moderately hard, friable to moderately indurated, few vugs	
-57.0	55.8	5.0	1:32 2:03 1:49 2:01 1:45	(5.0) 100%	(4.8) 96%	RUN-5						55.8ft: moderately hard to hard, moderately indurated to indurated	
-62.0	60.8	5.0	1:50 1:18 1:23 1:06 0:27	(4.7) 94%	(3.8) 76%	RUN-6						60.8ft: medium hard to hard, friable to moderately indurated 65.3ft: 0.3ft-thick sand lense	
-67.0	65.8	5.0	1:50 1:09 0:32 0:31 1:07	(4.6) 92%	(1.6) 32%	RUN-7						65.8ft: medium hard to moderately hard, little to some fine grained sand	
-72.0	70.8	5.0	4:23 1:37 1:52 1:17 1:45	(3.8) 76%	(2.0) 40%	RUN-8							
-77.0	75.8	5.0	0:35 0:50 1:13 0:13 0:09	(1.7) 34%	(0.0) 0%	RUN-9							
-82.0	80.8	5.0	0:40 1:22 0:59 0:08 0:08	(2.1) 42%	(0.0) 0%	RUN-10							
-87.0	85.8		N=84/0.8			631-12	(0.0) 0%	(NA)				POORLY GRADED SAND (SP), white (2.5Y8/1), wet, fine grained sand, strong HCl reaction	
-88.3	87.1	3.7	1:57/0.7 1:23 1:16 1:00	(2.8) 76%	(0.4) 11%	RUN-11	(9.7) 67%	(3.0) 21%				LIMESTONE, boundstone, white (2.5Y8/1), moderately hard to hard, moderately indurated to indurated, strong HCl reaction, trace fine sand, few vugs	
-92.0	90.8	5.0	1:33 1:29 1:01 1:11 1:31	(2.0) 40%	(0.4) 8%	RUN-12						90.8ft: hard, indurated	
-97.0	95.8	5.0	0:39 1:25 1:37 1:36 1:05	(4.9) 98%	(2.2) 44%	RUN-13						95.8ft: moderately hard to hard, friable to indurated, trace shell molds and casts	
-102.0	100.8											Coring Terminated at Elevation -102.0	

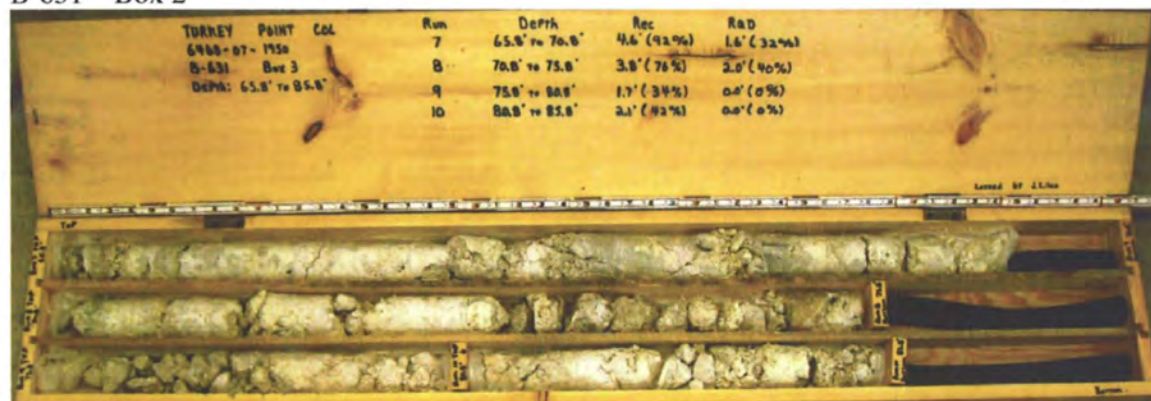
TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/3/08



B-631 - Box 1



B-631 - Box 2



B-631 - Box 3



B-631 - Box 4



GEOTECHNICAL BORING LOG

Prepared By SPZ Date 5-20-08

Checked By JM Date 5-26-08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade		GEOLOGIST: J. Liles		
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550 (Miller)					DRILLER: R. White/ J. Dugger/ B. Green			GROUND WATER (ft) 0 HR. NA 24 HR. NA	
BORING NO.: B-632					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core				
GROUND ELEV.: -1.6 ft (NAVD88)					NORTHING: 396,432 US ft (NAD83/90)					EASTING: 876,737 US ft (NAD83/90)				
TOTAL DEPTH: 100.3 ft			BORING DIAMETER: 4" to 33.6', 3" to 100.3'					CASING DEPTH: 4" to 33.6'			HAMMER (ID): 140 lb. Auto (M06)			
DATE STARTED: 5/4/08			COMPLETED: 5/5/08			CORE SIZE: HQ3			BITS USED: 2 7/8" Roller Cone					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	▼ MOI	L O G	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				
-1.6					Ground Surface								-1.6 0.0	
-1.6	0.0	WOH	WOH	WOH	0						632-1		MUCK, very dark grayish brown (2.5Y3/2), very soft, wet, strong HCl reaction	
-4.1	2.5				7						632-2A&B			
-6.7	5.1	WOH	1	6							632-3		LIMESTONE, boundstone, pale yellow (2.5Y8/2), very soft, wet, strong HCl reaction, trace fine grained sand, oolitic (Miami Formation) 5.1ft: little sand 7.4ft: hard	
-9.0	7.4	6	7	5	12						632-4			
		20	50/0.1								632-5			
-11.6	10.0	6	5	6							632-6		12.1ft: soft, trace sand	
-14.0	12.4	5	13	12							632-7		15.0ft: medium hard	
-16.6	15.0	17	19	16										
-23.7	22.1	3	3	1	4						632-8		22.1ft: very soft	
-28.5	26.9	7	25	48							632-9		LIMESTONE, boundstone, white (2.5Y8/1), hard, wet, strong HCl reaction, trace fine grained sand (Upper Fort Thompson Formation) 32.1ft: soft	
-33.7	32.1	3	22	5							632-10			
-36.9	35.3										632-11		35.3ft: moderately hard, little fine to medium grained sand 36.8ft: Switch sampling method to coring 36.8ft: hard, indurated, some vugs, recrystallized calcite, coralline 41.3ft: trace vugs	
-38.4	36.8	9	21	30							RUN-1			
-42.9	41.3										RUN-2			
-47.9	46.3										RUN-3		46.3 to 48.1ft: gray (2.5Y6/1)	
-52.9	51.3										RUN-4		LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, few vugs, strong HCl reaction, recrystallized calcite (Lower Fort Thompson Formation) 51.3ft: medium hard to moderately hard, friable to moderately indurated, trace vugs, fossiliferous 56.3ft: trace to few fine grained sand	
-57.9	56.3										RUN-5			
-62.9	61.3										RUN-6		61.3ft: medium hard to hard, friable to indurated	
-67.9	66.3										RUN-7		66.3ft: trace shell molds	
-72.9	71.3										RUN-8		71.3ft: moderately hard to hard, moderately indurated to indurated 73.0 to 76.0ft: soft zone, possible sand interbed	

TURKEY POINT COL BORE TURKEY POINT G.P.J. TURKEY POINT COL G.D.T. 5/30/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: J. Liles				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (Miller)			DRILLER: R. White/ J. Dugger/ B. Green			GROUND WATER (ft)				
BORING NO.: B-632			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: -1.6 ft (NAVD88)			NORTHING: 396,432 US ft (NAD83/90)			EASTING: 876,737 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 100.3 ft			BORING DIAMETER: 4" to 33.6", 3" to 100.3'			CASING DEPTH: 4" to 33.6'			HAMMER (ID): 140 lb. Auto (M06)				
DATE STARTED: 5/4/08			COMPLETED: 5/5/08			CORE SIZE: HQ3			BITS USED: 2 7/8" Roller Cone				
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-76.4					Continued from previous page								
-77.9	76.3									RUN-9			LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, few vugs, strong HCl reaction, recrystallized calcite (Lower Fort Thompson Formation) (continued)
-82.9	81.3									RUN-10			76.3ft: some vugs, trace shell molds and casts
-87.9	86.3									RUN-11			81.3ft: few vugs 83.0 to 84.0ft: soft zone, possible sand interbed
-92.9	91.3									RUN-12			86.3ft: medium hard to hard, friable to indurated, few shell molds and casts
-97.9	96.3									RUN-13			91.3ft: some vugs, few to little shell molds and casts
													96.3ft: moderately hard to hard, moderately indurated to indurated, little vugs
													-101.9
													100.3
													Boring Terminated at Elevation -101.9 ft

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



SHEET 1 OF 1

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: J. Liles			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (Miller)				DRILLER: R. White/ J. Dugger/ B. Green				GROUND WATER (ft)	
BORING NO.: B-632				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.6 ft (NAVD88)				NORTHING: 396,432 US ft (NAD83/90)				EASTING: 876,737 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 100.3 ft				CASING DEPTH: 4" to 33.6'						HAMMER (ID): 140 lb. Auto (M06)			
DATE STARTED: 5/4/08		COMPLETED: 5/5/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
												Begin Coring @ 36.8 ft	
-38.4	36.8	4.5	1:39 0:30 3:28 3:13	(3.5) 78%	(1.7) 38%	RUN-1	(10.3) 91%	(6.9) 61%				LIMESTONE, boundstone, white (2.5Y8/1), hard, wet, strong HCl reaction, trace fine grained sand (Upper Fort Thompson Formation) (continued) 36.8ft: hard, indurated, some vugs, recrystallized calcite, coralline	
-42.9	41.3		0:49/0.5										
		5.0	2:18 1:30 1:59 2:01 2:19	(5.0) 100%	(4.0) 80%	RUN-2						41.3ft: trace vugs	
-47.9	46.3												
		5.0	2:04 3:03 1:55 1:54 1:35	(4.9) 98%	(3.9) 78%	RUN-3						46.3 to 48.1ft: gray (2.5Y6/1)	
-52.9	51.3						(39.9) 76%	(15.3) 29%				LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, few vugs, strong HCl reaction, recrystallized calcite (Lower Fort Thompson Formation)	
		5.0	1:55 1:20 0:55 0:23 0:29	(4.0) 80%	(1.4) 28%	RUN-4						51.3ft: medium hard to moderately hard, friable to moderately indurated, trace vugs, fossiliferous	
-57.9	56.3												
		5.0	0:51 1:00 0:40 0:30 0:31	(3.6) 72%	(1.6) 32%	RUN-5						56.3ft: trace to few fine grained sand	
-62.9	61.3												
		5.0	0:44 0:55 0:24 0:09 0:37	(3.1) 62%	(0.0) 0%	RUN-6						61.3ft: medium hard to hard, friable to indurated	
-67.9	66.3												
		5.0	0:57 1:38 0:32 1:01 1:00	(3.7) 74%	(1.7) 34%	RUN-7						66.3ft: trace shell molds	
-72.9	71.3											71.3ft: moderately hard to hard, moderately indurated to indurated 73.0 to 76.0ft: soft zone, possible sand interbed	
		5.0	1:52 0:42 0:05 0:03 0:22	(1.7) 34%	(0.4) 8%	RUN-8							
-77.9	76.3											76.3ft: some vugs, trace shell molds and casts	
		5.0	1:53 1:37 1:23 1:30 0:37	(4.8) 96%	(3.5) 70%	RUN-9							
-82.9	81.3											81.3ft: few vugs 83.0 to 84.0ft: soft zone, possible sand interbed	
		5.0	0:29 0:44 0:15 0:41 1:06	(3.8) 76%	(0.4) 8%	RUN-10							
-87.9	86.3											86.3ft: medium hard to hard, friable to indurated, few shell molds and casts	
		5.0	1:27 1:44 0:38 0:52 1:04	(3.5) 70%	(0.8) 16%	RUN-11							
-92.9	91.3											91.3ft: some vugs, few to little shell molds and casts	
		5.0	1:05 0:40 0:49 0:47 0:42	(4.7) 94%	(1.7) 34%	RUN-12							
-97.9	96.3											96.3ft: moderately hard to hard, moderately indurated to indurated, little vugs	
		4.0	0:44 0:43 1:05 0:53	(3.9) 98%	(1.1) 28%	RUN-13							
-101.9	100.3											Coring Terminated at Elevation -101.9	

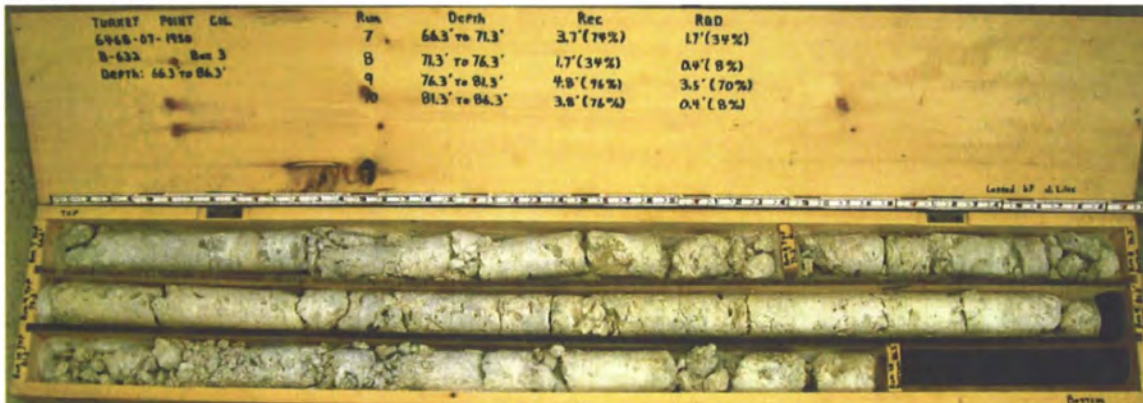
TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



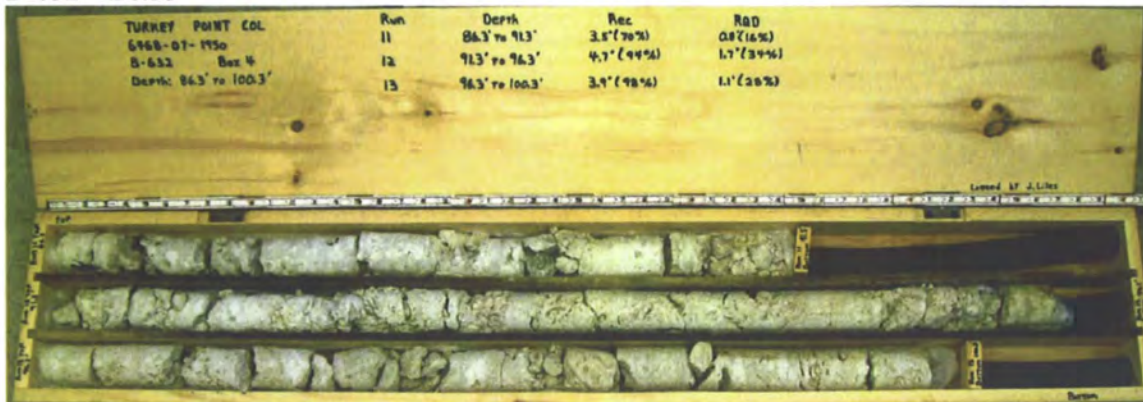
B-632 - Box 1



B-632 - Box 2



B-632 - Box 3



B-632 - Box 4



BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: S. Lehman					
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-55 Marsh Buggy				DRILLER: P. Pitts/ B. Carrasco				GROUND WATER (ft)			
BORING NO.: B-633				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA			
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 396,113 US ft (NAD83/90)				EASTING: 876,994 US ft (NAD83/90)				24 HR. NA			
TOTAL DEPTH: 100.4 ft		BORING DIAMETER: 4" to 100.4"				CASING DEPTH: 4" to 28.4'				HAMMER (ID): 140 lb. Auto (MEC-425)					
DATE STARTED: 5/13/08		COMPLETED: 5/15/08		CORE SIZE: HQ3				BITS USED: 3 7/8" Roller Cone							
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT						SAMP.	LOG	SOIL AND ROCK DESCRIPTION		
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO.			MOI	
-1.5					Ground Surface										
-1.5	0.0	WOR	WOR	WOR	0						633-1		-1.5	MUCK, very dark grayish brown (2.5Y3/2), very soft, wet, strong HCl reaction, organics, trace shell fragments	
-5.0	3.5	9	5	7	12						633-2		-4.5	LIMESTONE, boundstone, white (2.5Y8/1), very soft, friable, wet, strong HCl reaction, oolitic (Miami Formation)	
-7.5	6.0	4	15	50/0.4						65/0.9	633-3			6.0ft: hard, friable to indurated	
-10.0	8.5	3	5	3	8						633-4			8.5ft: very soft, friable	
-12.5	11.0	6	50/0.3							56/0.8	633-5			11.0ft: hard	
-15.0	13.5	9	9	17	26						633-6			13.5ft: soft, moderately indurated	
-20.0	18.5	17	8	8	16						633-7			18.5ft: very soft	
-25.0	23.5	11	9	9	18						633-8			23.5ft: friable to moderately indurated	
-30.0	28.5	7	6	19	25						633-9		-27.5	LIMESTONE, boundstone, white (2.5Y8/1), soft, wet, moderately indurated, strong HCl reaction, fossiliferous, coralline (Upper Fort Thompson Formation)	
-35.0	33.5	36	23	50/0.3							633-10			33.5ft: hard, indurated	
-36.3	34.8											RUN-1			34.8ft: Switch sampling method to SPT
-37.3	35.8											RUN-2			34.8ft: few vugs
														35.8ft: little vugs, recrystallized calcite	
-42.3	40.8											RUN-3			
-47.3	45.8											RUN-4		-49.3	45.8ft: light gray (10Y7/1), few vugs, to 47.8ft
-52.3	50.8											RUN-5		47.8	LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, few vugs, strong HCl reaction (Lower Fort Thompson Formation)
-57.3	55.8											RUN-6			50.8ft: white (2.5Y8/1), to light gray (2.5Y7/1)
-62.3	60.8											RUN-7			55.8ft: white (2.5Y8/1), shell molds
-67.3	65.8											RUN-8			65.8ft: moderately indurated to indurated, little vugs
-72.3	70.8									RUN-8			70.8ft: indurated, trace vugs		

TURKEY POINT COL BORE TURKEY POINT COL GDI 8/18/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: S. Lehman							
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-55 Marsh Buggy			DRILLER: P. Pitts/ B. Carrasco			GROUND WATER (ft)							
BORING NO.: B-633			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA							
GROUND ELEV.: -1.5 ft (NAVD88)			NORTHING: 396,113 US ft (NAD83/90)			EASTING: 876,994 US ft (NAD83/90)			24 HR. NA							
TOTAL DEPTH: 100.4 ft			BORING DIAMETER: 4" to 100.4"			CASING DEPTH: 4" to 28.4'			HAMMER (ID): 140 lb. Auto (MEC-425)							
DATE STARTED: 5/13/08			COMPLETED: 5/15/08			CORE SIZE: HQ3			BITS USED: 3 7/8" Roller Cone							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100						
-76.3					Continued from previous page											
-77.3	75.8										RUN-10			LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, few vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)		
-82.3	80.8										RUN-11			75.8ft: few vugs 80.8ft: trace vugs		
-87.3	85.8										RUN-12			85.8ft: moderately hard to hard, moderately indurated to indurated, few to little vugs		
-92.3	90.8										RUN-13			90.5ft: hard, indurated, trace vugs		
-97.3	95.8										RUN-14			95.8ft: moderately hard, moderately indurated		
														-101.9	100.4	Boring Terminated at Elevation -101.9 ft

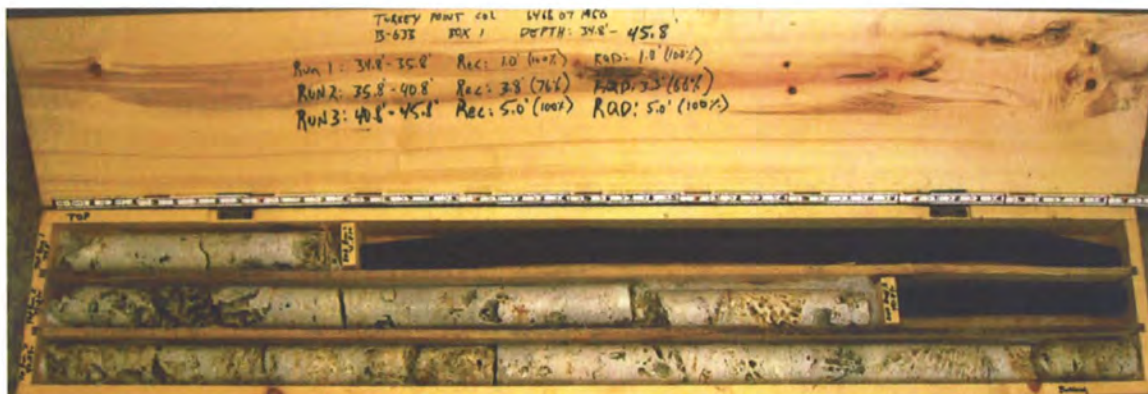
TURKEY POINT COL BORE TURKEY POINT COL.GDT: 8/18/08



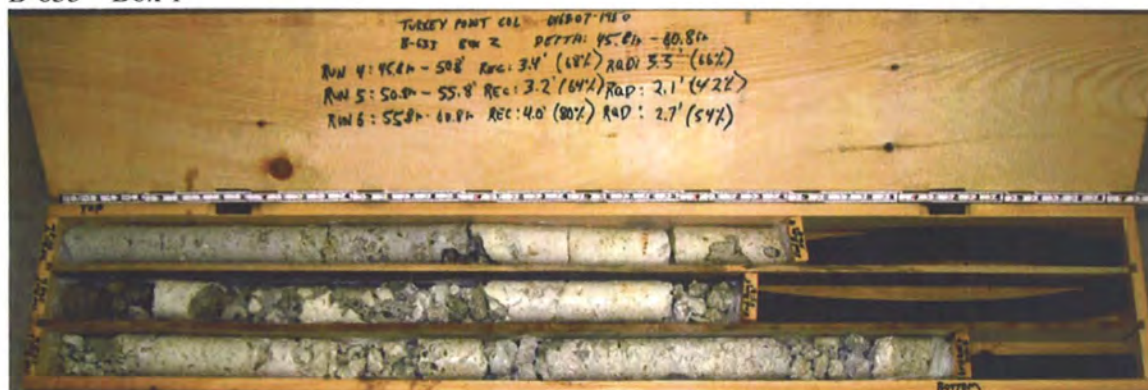
SHEET 1 OF 1

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: S. Lehman			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-55 Marsh Buggy				DRILLER: P. Pitts/ B. Carrasco				GROUND WATER (ft)	
BORING NO.: B-633				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.5 ft (NAVD88)				NORTHING: 396,113 US ft (NAD83/90)				EASTING: 876,994 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 100.4 ft				CASING DEPTH: 4" to 28.4'						HAMMER (ID): 140 lb. Auto (MEC-425)			
DATE STARTED: 5/13/08		COMPLETED: 5/15/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %RQD (ft) %		SAMP. NO.	STRATA REC (ft) %RQD (ft) %		L O G	DESCRIPTION AND REMARKS			
										Begin Coring @ 34.8 ft			
-36.3	34.8	1.0	8:11	(1.0)	(1.0)	RUN-1	(11.8)	(11.2)			LIMESTONE, boundstone, white (2.5Y8/1), soft, wet, moderately indurated, strong HCl reaction, fossiliferous, coralline (Upper Fort Thompson Formation)		
-37.3	35.8	5.0	8:00 11:51 10:02 5:33	100% (3.8) 76%	100% (3.3) 66%	RUN-2	91%	86%			(continued) 34.8ft: few vugs 35.8ft: little vugs, recrystallized calcite		
-42.3	40.8	5.0	24:59 17:44 9:25 6:54 5:58	(5.0) 100%	(5.0) 100%	RUN-3							
-47.3	45.8	5.0	8:16 5:04 3:43 4:03 3:09	(3.4) 68%	(3.3) 66%	RUN-4					-49.3	45.8ft: light gray (10Y7/1), few vugs, to 47.8ft	
-52.3	50.8	5.0	4:27 1:11 3:30 1:17 1:10	(3.2) 64%	(2.1) 42%	RUN-5	(32.8) 62%	(17.6) 33%				LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, few vugs, strong HCl reaction (Lower Fort Thompson Formation)	
-57.3	55.8	5.0	4:22 2:27 2:46 1:10 3:09	(4.0) 80%	(2.7) 54%	RUN-6						50.8ft: white (2.5Y8/1), to light gray (2.5Y7/1)	
-62.3	60.8	5.0	3:28 8:10 4:10 0:58 1:04	(2.7) 54%	(2.2) 44%	RUN-7						55.8ft: white (2.5Y8/1), shell molds	
-67.3	65.8	5.0	3:44 5:37 3:56 2:12 3:55	(1.9) 38%	(0.0) 0%	RUN-8						65.8ft: moderately indurated to indurated, little vugs	
-72.3	70.8	5.0	3:23 3:21 3:04 3:25 3:58	(1.7) 34%	(0.6) 12%	RUN-9						70.8ft: indurated, trace vugs	
-77.3	75.8	5.0	7:01 9:45 5:59 8:15 3:18	(3.9) 78%	(1.6) 32%	RUN-10						75.8ft: few vugs	
-82.3	80.8	5.0	6:19 6:50 3:10 5:30 1:47	(2.8) 56%	(1.0) 20%	RUN-11						80.8ft: trace vugs	
-87.3	85.8	5.0	3:11 6:20 4:14 3:45 3:00	(4.3) 86%	(2.8) 56%	RUN-12						85.8ft: moderately hard to hard, moderately indurated to indurated, few to little vugs	
-92.3	90.8	5.0	3:10 1:50 0:55 2:05 1:41	(3.7) 74%	(1.7) 34%	RUN-13						90.5ft: hard, indurated, trace vugs	
-97.3	95.8	4.6	1:08 0:28 3:31 3:33 3:40/0.6	(3.2) 70%	(1.5) 33%	RUN-14						95.8ft: moderately hard, moderately indurated	
-101.9	100.4										-101.9	100.4	
Coring Terminated at Elevation -101.9													

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDI 5/18/08



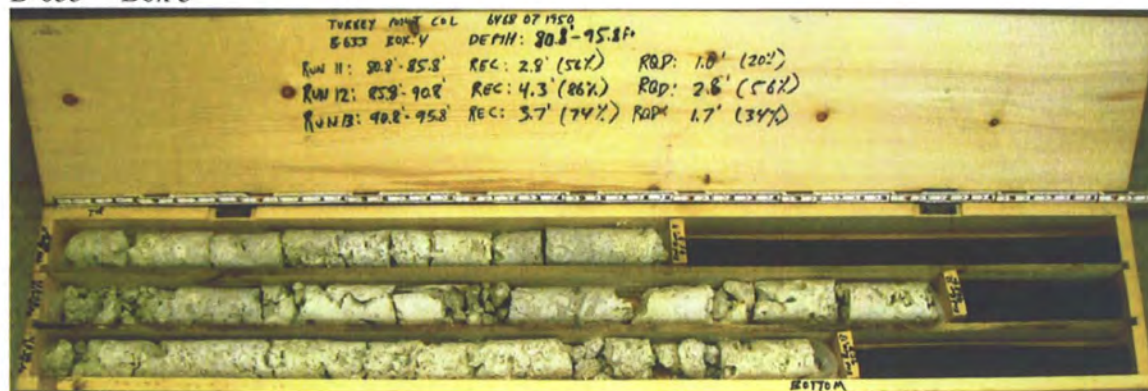
B-633 - Box 1



B-633 - Box 2



B-633 - Box 3



B-633 - Box 4



B-633 - Box 5



GEOTECHNICAL BORING LOG

Prepared By JP 2 Date 7-10-08Checked By MM Date 7-10-08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: H. Lyatuu				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 Marsh Buggy			DRILLER: D. White/ R. Hall			GROUND WATER (ft)				
BORING NO.: B-634			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: -0.7 ft (NAVD88)			NORTHING: 395,758 US ft (NAD83/90)			EASTING: 876,677 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 127.5 ft			BORING DIAMETER: 4" to 30.0', 3" to 127.5'			CASING DEPTH: 4" to 30.0', 3" to 126.0'			HAMMER (ID): 140 lb. Auto (893)				
DATE STARTED: 4/7/08			COMPLETED: 4/9/08			CORE SIZE: HQ3			BITS USED: 2 15/16" Tricone				
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-0.7					Ground Surface								
-0.7	0.0	WOH	WOH	WOH	0						634-1		MUCK, very dark gray (7.5YR3/1), very soft, wet, trace fine grained sand, trace shell fragments, strong HCl reaction
-3.2	2.5	1	1	2	3						634-2		2.5ft: soft, weak HCl reaction
-5.7	5.0	4	3	3	6						634-3		LIMESTONE, boundstone, white (10YR8/1), very soft, wet, trace shell fragments, strong HCl reaction, oolitic (Miami Formation)
-8.2	7.5	17	25	10	35						634-4		7.5ft: white (10YR8/10), to gray (10YR6/1), medium hard
-10.7	10.0	6	6	6	12						634-5		10.0ft: white (10YR8/1), very soft
-13.2	12.5	12	9	7	16						634-6		
-15.7	15.0	6	12	13	25						634-7		15.0ft: soft
-19.5	18.8	44	21	10	31						634-8		18.8ft: white (2.5Y8/1), medium hard
-24.5	23.8	10	3	4	7						634-9		23.8ft: white (10YR8/1), soft
-29.5	28.8	14	38	50/0.4	88/0.9						634-10		LIMESTONE, boundstone, white (10YR8/1), hard, wet, fossiliferous, trace fine grained sand, strong HCl reaction (Upper Fort Thompson Formation)
-30.9	30.2										RUN-1		30.2ft: Switch sampling method to coring
-32.0	31.3										RUN-2		30.2ft: white (10YR8/1), soft to hard, friable to indurated, fossiliferous, strong HCl reaction, few vugs
-37.2	36.5										RUN-3		31.3ft: moderately hard, moderately indurated, cemented sand layers, coralline
-42.2	41.5										RUN-4		36.5ft: hard, indurated, locally interconnected vugs
-47.2	46.5										RUN-5		41.5ft: few vugs
-52.2	51.5										RUN-6		LIMESTONE, boundstone, white (7.5YR8/1), moderately hard, moderately indurated, trace shell molds and casts (Lower Fort Thompson Formation)
-57.2	56.5										RUN-7		56.5ft: white (2.5Y8/1)
-62.2	61.5										RUN-8		61.5ft: white (7.5YR8/1), hard, indurated
-67.2	66.5										RUN-9		66.5ft: white (10YR8/1)
-72.2	71.5										RUN-10		66.5 to 76.5ft: interbedded sand layers
													71.5ft: moderately hard, moderately indurated

TURKEY POINT COL BORE, TURKEY POINT GPJ, TURKEY POINT COL GDT 7/10/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: H. Lyatuu	
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550 Marsh Buggy		DRILLER: D. White/ R. Hall		GROUND WATER (ft)	
BORING NO.: B-634		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: -0.7 ft (NAVD88)		NORTHING: 395,758 US ft (NAD83/90)		EASTING: 876,677 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 127.5 ft		BORING DIAMETER: 4" to 30.0', 3" to 127.5'		CASING DEPTH: 4" to 30.0', 3" to 126.0'		HAMMER (ID): 140 lb. Auto (893)	
DATE STARTED: 4/7/08		COMPLETED: 4/9/08		CORE SIZE: HQ3		BITS USED: 2 15/16" Tricone	

ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-75.5					Continued from previous page										
-77.2	76.5														LIMESTONE: boundstone, white (7.5YR8/1), moderately hard, moderately indurated, trace shell molds and casts (Lower Fort Thompson Formation) (continued)
-78.7	78.0	3	9	11											
-82.2	81.5														81.5ft: medium hard
-87.2	86.5														86.5ft: little shell molds and casts
-92.2	91.5														
-97.2	96.5														
-102.2	101.5														101.5ft: mostly shell molds and casts
-107.2	106.5														
-112.2	111.5														111.5ft: trace shell molds and casts
-117.2	116.5	8	9	5											-115.7
															Silty SAND (SM), light gray (10YR7/2), medium dense, wet, interbedded friable sandy limestone lenses (Tamiami Formation)
-126.7	126.0	4	4	5											116.5ft: Switch sampling method to SPT
															126.0ft: loose
															-128.2
															127.5
															Boring Terminated at Elevation -128.2 ft

TURKEY POINT COL BORE TURKEY POINT COL GDT 7/10/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: H. Lyatuu			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 Marsh Buggy				DRILLER: D. White/ R. Hall				GROUND WATER (ft)	
BORING NO.: B-634				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -0.7 ft (NAVD88)				NORTHING: 395,758 US ft (NAD83/90)				EASTING: 876,677 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 127.5 ft				CASING DEPTH: 4" to 30.0', 3" to 126.0'						HAMMER (ID): 140 lb. Auto (893)			
DATE STARTED: 4/7/08		COMPLETED: 4/9/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
												Begin Coring @ 30.2 ft	
-30.9	30.2	1.3	1.20	(0.4)	(0.0)		RUN-1	(15.2)	(5.1)			LIMESTONE, boundstone, white (10YR8/1), hard, wet, fossiliferous, trace fine grained sand, strong HCl reaction (Upper Fort Thompson Formation) (continued) 30.2ft: white (10YR8/1), soft to hard, friable to indurated, fossiliferous, strong HCl reaction, few vugs 31.3ft: moderately hard, moderately indurated, cemented sand layers, coralline 36.5ft: hard, indurated, locally interconnected vugs	
-32.2	31.5	5.0	0.20/0.3	31%	0%		RUN-2	71%	24%				
			1.02	(3.0)	(1.3)		RUN-2						
			1.00	60%	26%								
			1.08										
-37.2	36.5	5.0	1.56	(4.8)	(3.0)		RUN-3						
			2.02	96%	60%								
			1.52										
			1.52										
			1.28										
			1.12										
-42.2	41.5	5.0	1.19	(3.9)	(0.4)		RUN-4					41.5ft: few vugs	
			1.00	78%	8%								
			1.30										
			0.59										
			1.12										
-47.2	46.5	5.0	1.34	(3.1)	(0.4)		RUN-5						
			1.15	62%	8%								
			1.20										
			1.35										
			0.45										
-52.2	51.5	5.0	0.55	(3.4)	(0.9)		RUN-6	(30.6)	(4.6)			LIMESTONE, boundstone, white (7.5YR8/1), moderately hard, moderately indurated, trace shell molds and casts (Lower Fort Thompson Formation)	
			1.12	68%	18%			48%	7%				
			1.20										
			0.52										
			1.15										
-57.2	56.5	5.0	0.46	(2.7)	(0.8)		RUN-7					56.5ft: white (2.5Y8/1)	
			0.48	54%	16%								
			0.48										
			2.00										
			2.45										
-62.2	61.5	5.0	2.21	(3.0)	(0.0)		RUN-8					61.5ft: white (7.5YR8/1), hard, indurated	
			1.10	60%	0%								
			0.41										
			1.10										
			0.33										
-67.2	66.5	5.0	0.50	(1.0)	(0.0)		RUN-9					66.5ft: white (10YR8/1) 66.5 to 76.5ft: interbedded sand layers	
			0.45	20%	0%								
			0.10										
			0.10										
			0.06										
-72.2	71.5	5.0	0.08	(0.8)	(0.0)		RUN-10					71.5ft: moderately hard, moderately indurated	
			0.28	16%	0%								
			0.17										
			0.40										
			0.10										
-77.2	76.5	5.0	0.10	(0.8)	(0.0)		RUN-11						
			N=20				634-11A&B						
-78.7	78.0	3.5	2.00	(1.8)	(0.4)		RUN-11						
			0.47	51%	11%								
			0.56										
-82.2	81.5	5.0	0.33/0.5	(2.4)	(0.4)		RUN-12					81.5ft: medium hard	
			0.40	48%	8%								
			0.20										
			0.22										
			0.15										
-87.2	86.5	5.0	0.15	(1.2)	(0.0)		RUN-13					86.5ft: little shell molds and casts	
			0.36	24%	0%								
			0.36										
			0.16										
			0.56										
-92.2	91.5	5.0	1.06	(3.2)	(1.4)		RUN-14						
			1.10	64%	28%								
			0.58										
			0.25										
			0.40										
-97.2	96.5	5.0	0.35	(2.0)	(0.0)		RUN-15						
			0.21	40%	0%								
			0.28										
			0.15										
			0.25										
-102.2	101.5	5.0	0.16	(4.2)	(0.7)		RUN-16					101.5ft: mostly shell molds and casts	
			0.25	84%	14%								
			0.44										
			0.43										

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 7:10:08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: H. Lyatuu
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 Marsh Buggy	DRILLER: D. White/ R. Hall	GROUND WATER (ft)
BORING NO.: B-634	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -0.7 ft (NAVD88)	NORTHING: 395,758 US ft (NAD83/90)	EASTING: 876,677 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 127.5 ft	CASING DEPTH: 4" to 30.0', 3" to 126.0'	HAMMER (ID): 140 lb. Auto (893)	
DATE STARTED: 4/7/08	COMPLETED: 4/9/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	RQD (ft) %	SAMP. NO.	REC (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS
										Continued from previous page
-107.2	106.5	5.0	0:22 0:31	(3.2) 64%	(0.0) 0%	RUN-17				LIMESTONE, boundstone, white (7.5YR8/1), moderately hard, moderately indurated, trace shell molds and casts (Lower Fort Thompson Formation) (continued)
-112.2	111.5	5.0	0:43 0:43 0:53 0:53	(1.7) 34%	(0.0) 0%	RUN-18				111.5ft. trace shell molds and casts
-117.2	116.5		0:31 0:41 0:31 0:31 0:21				(0.0) 0%	(NA)		-115.7 -117.2 Silty SAND (SM), light gray (10YR7/2), medium dense, wet, interbedded friable sandy limestone lenses (Tamiami Formation) Coring Terminated at Elevation -117.2

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL.GDT 7/10/08



B-634 - Box 1



B-634 - Box 2



B-634 - Box 3



GEOTECHNICAL BORING LOG

Prepared By JPJ Date 5-30-08Checked By MM Date 5-30-08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: H. Lyatuu			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 Marsh Buggy				DRILLER: D. White/ R. Hall				GROUND WATER (ft)	
BORING NO.: B-635				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -0.9 ft (NAVD88)				NORTHING: 395,771 US ft (NAD83/90)				EASTING: 876,798 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 128.5 ft		BORING DIAMETER: 4" to 35.0', 3" to 128.5'				CASING DEPTH: 4" to 35.0', 3" to 127.0'				HAMMER (ID): 140 lb. Auto (893)			
DATE STARTED: 4/15/08		COMPLETED: 4/17/08		CORE SIZE: HQ3				BITS USED: 2 15/16" Tricone					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-0.9					Ground Surface								0.0
-0.9	0.0	WOH	WOH	WOH									-0.9
-3.4	2.5												-2.9
		WOH	4	3									-4.1
-5.9	5.0												
		5	4	4									
-8.4	7.5												
		18	5	4									
-10.9	10.0												
		8	7	5									
-13.4	12.5												
		20	15	19									
-15.9	15.0												
		12	11	18									
-19.9	19.0												
		18	13	11									
-24.9	24.0												
		7	8	6									
-29.9	29.0												
		10	7	8									
-34.9	34.0												
-35.9	35.0	30	50/0.3										
-37.9	37.0												
-42.9	42.0												
-47.9	47.0												
-52.9	52.0												
-57.9	57.0												
-62.9	62.0												
-67.9	67.0												
-72.9	72.0												

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: H. Lyatuu					
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 Marsh Buggy			DRILLER: D. White/ R. Hall			GROUND WATER (ft)					
BORING NO.: B-635			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA					
GROUND ELEV.: -0.9 ft (NAVD88)			NORTHING: 395,771 US ft (NAD83/90)			EASTING: 876,798 US ft (NAD83/90)			24 HR. NA					
TOTAL DEPTH: 128.5 ft			BORING DIAMETER: 4" to 35.0', 3" to 128.5'			CASING DEPTH: 4" to 35.0', 3" to 127.0'			HAMMER (ID): 140 lb. Auto (893)					
DATE STARTED: 4/15/08			COMPLETED: 4/17/08			CORE SIZE: HQ3			BITS USED: 2 15/16" Tricone					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				
-75.7					Continued from previous page									
-77.9	77.0										RUN-10			LIMESTONE, boundstone, white (7.5YR8/1), medium hard, moderately indurated, few vugs, fossiliferous, little shell molds and casts, porous, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-82.9	82.0										RUN-11			82.0ft: hard, indurated
-87.9	87.0										RUN-12			87.0ft: medium hard, moderately indurated
-92.9	92.0										RUN-13			92.0ft: some shell molds and casts
-97.9	97.0										RUN-14			97.0ft: moderately hard
-102.9	102.0										RUN-15			102.0ft: hard, indurated, mostly shell molds and casts
-107.9	107.0										RUN-16			107.0ft: moderately hard, moderately indurated, trace shell molds and casts
-112.9	112.0										RUN-17			Interbedded Silty SAND (SM), light greenish gray (10Y7/1), wet, fine grained sand, strong HCl reaction, with sandstone, medium hard, moderately indurated (Tamiami Formation)
-117.9	117.0	17	23	20							635-12			117.0ft: Switch sampling method to SPT 117.0ft: light greenish gray (5BG7/1), dense, weak HCl reaction
-127.9	127.0	6	6	8							635-13			127.0ft: greenish gray (10Y6/1), medium dense
														Boring Terminated at Elevation -129.4 ft

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT S 30/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: H. Lyatuu
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 Marsh Buggy	DRILLER: D. White/ R. Hall	GROUND WATER (ft)
BORING NO.: B-635	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -0.9 ft (NAVD88)	NORTHING: 395,771 US ft (NAD83/90)	EASTING: 876,798 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 128.5 ft	CASING DEPTH: 4" to 35.0', 3" to 127.0'	HAMMER (ID): 140 lb. Auto (893)	
DATE STARTED: 4/15/08	COMPLETED: 4/17/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Begin Coring @ 35.0 ft
-35.9	35.0	2.0	2:11 1:28	(1.4) 70%	(0.0) 0%	RUN-1	(13.1) 77%	(8.4) 49%		LIMESTONE with interbedded sand layers, boundstone, white (10YR8/1), hard, wet, fossiliferous, fine grained sand, recrystallized calcite, strong HCl reaction (Upper Fort Thompson Formation) <i>(continued)</i>
-37.9	37.0	5.0	2:10 1:11 1:32 1:33 1:04	(5.0) 100%	(3.9) 78%	RUN-2				35.0ft: white (10YR8/1), moderately hard, moderately indurated, fossiliferous, strong HCl reaction, few vugs 37.0ft: hard, indurated, coralline, recrystallized calcite, little vugs
-42.9	42.0	5.0	1:02 2:24 1:33 1:49 1:08	(4.3) 86%	(3.8) 76%	RUN-3				
-47.9	47.0	5.0	0:34 1:23 0:25 0:12 0:13	(2.4) 48%	(0.7) 14%	RUN-4				47.0ft: hard to moderately hard
-52.9	52.0	5.0	0:34 0:30 0:53 0:31 0:30	(3.0) 60%	(0.7) 14%	RUN-5	(34.2) 57%	(13.1) 22%	-52.9	LIMESTONE, boundstone, white (7.5YR8/1), medium hard, moderately indurated, few vugs, fossiliferous, little shell molds and casts, porous, strong HCl reaction (Lower Fort Thompson Formation)
-57.9	57.0	5.0	1:05 0:35 0:15 1:25 1:15	(4.0) 80%	(2.8) 56%	RUN-6				57ft: moderately hard, moderately indurated, trace shell molds and casts
-62.9	62.0	5.0	1:23 0:36 0:09 0:09 0:07	(2.1) 42%	(1.5) 30%	RUN-7				62.0ft: white (10YR8/1), trace fine grained sand
-67.9	67.0	5.0	0:23 1:32 0:54 1:12 1:14	(4.0) 80%	(2.5) 50%	RUN-8				67.0ft: hard, indurated
-72.9	72.0	5.0	1:35 0:35 1:05 0:45 0:45	(3.5) 70%	(1.4) 28%	RUN-9				72.0ft: moderately hard to medium hard, moderately indurated
-77.9	77.0	5.0	0:45 0:45 1:29 1:09 0:39	(3.5) 70%	(1.6) 32%	RUN-10				
-82.9	82.0	5.0	0:25 0:10 0:20 0:50 0:35	(2.5) 50%	(0.5) 10%	RUN-11				82.0ft: hard, indurated
-87.9	87.0	5.0	1:05 0:45 0:35 0:25 0:55	(2.0) 40%	(0.0) 0%	RUN-12				87.0ft: medium hard, moderately indurated
-92.9	92.0	5.0	0:33 0:44 0:35 0:11 0:25	(2.1) 42%	(0.4) 8%	RUN-13				92.0ft: some shell molds and casts
-97.9	97.0	5.0	0:28 0:28 0:35 0:45 0:20	(2.9) 58%	(0.9) 18%	RUN-14				97.0ft: moderately hard
-102.9	102.0	5.0	0:50 0:45 0:30 0:30 0:35	(3.0) 60%	(0.8) 16%	RUN-15				102.0ft: hard, indurated, mostly shell molds and casts
-107.9	107.0	5.0	0:40 1:10 1:05	(1.6) 32%	(0.0) 0%	RUN-16				107.0ft: moderately hard, moderately indurated, trace shell molds and casts

TURKEY POINT COL CORE TURKEY POINT GPI TURKEY POINT COL GDI 5/30/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: H. Lyatuu
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 Marsh Buggy	DRILLER: D. White/ R. Hall	GROUND WATER (ft)
BORING NO.: B-635	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -0.9 ft (NAVD88)	NORTHING: 395,771 US ft (NAD83/90)	EASTING: 876,798 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 128.5 ft	CASING DEPTH: 4" to 35.0', 3" to 127.0'	HAMMER (ID): 140 lb. Auto (893)	
DATE STARTED: 4/15/08	COMPLETED: 4/17/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-112.9	112.0		0:25 0:55							
		5.0	0:20 0:48 0:18 0:10 0:50	(2.2) 44%	(0.0) 0%	RUN-17	(2.2) 44%	(NA)		Interbedded Silty SAND (SM), light greenish gray (10Y7/1), wet, fine grained sand, strong HCl reaction, with sandstone, medium hard, moderately indurated (Tamiami Formation)
-117.9	117.0									Coring Terminated at Elevation -117.9

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



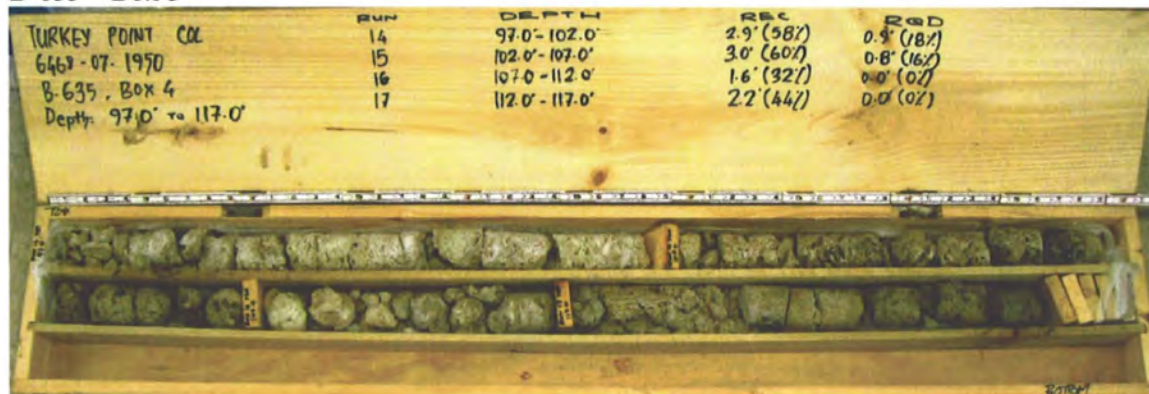
B-635 - Box 1



B-635 - Box 2



B-635 - Box 3



B-635 - Box 4



GEOTECHNICAL BORING LOG

Prepared By W. J. Liles Date 10/12/08Checked By W. J. Liles Date 10/12/08*Revised 10/12/08*

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade		GEOLOGIST: Burroughs/ Liles/ Lehman							
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-55 Marsh Buggy					DRILLER: P. Pitts/ B. Carrasco					GROUND WATER (ft)				
BORING NO.: B-636					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA				
GROUND ELEV.: -1.1 ft (NAVD88)					NORTHING: 395,715 US ft (NAD83/90)					EASTING: 877,193 US ft (NAD83/90)					24 HR. NA				
TOTAL DEPTH: 126.0 ft					BORING DIAMETER: 4" to 27.6', 3" to 126.0'					CASING DEPTH: 4" to 27.6', 3" to 119.5'					HAMMER (ID):140 lb. Auto (MEC-425)				
DATE STARTED: 4/23/08					COMPLETED: 5/1/08					CORE SIZE: HQ3					BITS USED: 2 7/8 & 3 7/8" Roller Cones				
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	LOG	SOIL AND ROCK DESCRIPTION							
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100							NO.		
-1.1					Ground Surface														
-1.1	0.0	WOR	WOR	WOR	0						636-1		-1.1	0.0					
-4.1	3.0										636-2A&B		-4.8	3.7					
-6.1	5.0	WOH	3	6	9						636-3		LIMESTONE, boundstone, white (10YR8/1), very soft, wet, strong HCl reaction, oolitic (Miami Formation) 5.0ft: medium hard 7.2ft: very soft						
-8.3	7.2		25	13	22						636-4								
			13	11	9						636-5		12.5ft: white (10YR8/1), to light gray (10YR7/1) 14.8ft: white (10YR8/1), hard						
-10.9	9.8		4	5	5						636-6								
-13.6	12.5		7	5	6						636-7		18.9ft: medium hard 23.9ft: very soft						
-15.9	14.8		26	26	38						636-8								
-17.4	16.3		31	50/0.3							636-9		29.1ft: white (10YR8/1), to gray (10YR6/1), fossiliferous, sandy 32.0ft: Silty SAND (SM), white (10YR8/1), very loose, wet, fine grained sand, strong HCl reaction						
-20.0	18.9		5	15	17						636-10								
-25.0	23.9		6	7	5						636-11		-33.1	32.0					
-30.2	29.1		3	4	3						636-12A&B		-35.1	34.0					
-34.8	33.7										RUN-1		LIMESTONE, boundstone, white (10YR8/1), hard, wet, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation) 34.5ft: Switch sampling method to coring 34.5ft: white (2.5Y8/1), indurated, some vugs, recrystallized calcite, coralline 39.5ft: mostly vugs						
-35.6	34.5		4	50/0.3							RUN-2								
-40.6	39.5										RUN-3		44.5ft: light gray (10Y7/1) to 47.5ft 47.5						
-45.6	44.5										RUN-4								
-50.6	49.5										RUN-5		LIMESTONE, boundstone, white (2.5YR8/1), hard, indurated, few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) 49.5ft: moderately indurated 54.5ft: indurated, trace sand, trace shell molds and casts						
-55.6	54.5										RUN-6								
-60.6	59.5										RUN-7		59.5ft: moderately hard to hard, moderately indurated to indurated, trace sand 64.5ft: hard, indurated, trace vugs						
-65.6	64.5										RUN-8								
-70.6	69.5												69.5ft: moderately hard, moderately indurated, little vugs, trace to few shell molds and casts						
-75.6	74.5																		

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 10 2 08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: Burroughs/ Liles/ Lehman								
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-55 Marsh Buggy		DRILLER: P. Pitts/ B. Carrasco		GROUND WATER (ft)								
BORING NO.: B-636		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA								
GROUND ELEV.: -1.1 ft (NAVD88)		NORTHING: 395,715 US ft (NAD83/90)		EASTING: 877,193 US ft (NAD83/90)		24 HR. NA								
TOTAL DEPTH: 126.0 ft		BORING DIAMETER: 4" to 27.6", 3" to 126.0"		CASING DEPTH: 4" to 27.6", 3" to 119.5'		HAMMER (ID): 140 lb. Auto (MEC-425)								
DATE STARTED: 4/23/08		COMPLETED: 5/1/08		CORE SIZE: HQ3		BITS USED: 2 7/8 & 3 7/8" Roller Cones								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI			
-75.9		Continued from previous page												
-80.6	79.5												74.5ft: few vugs, vertical solution cavities LIMESTONE, boundstone, white (2.5YR8/1), hard, indurated, few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)	
-85.6	84.5													
-90.6	89.5												84.5ft: moderately hard to hard, moderately indurated to indurated, trace vugs	
-95.6	94.5												89.5ft: hard, indurated, few vugs, little shell molds and casts	
-100.6	99.5												94.5ft: trace vugs	
-105.6	104.5												99.5ft: few vugs	
-110.6	109.5													
-115.6	114.5												109.5ft: moderately hard, moderately indurated, trace vugs	
-120.6	119.5	5	11	12									114.5ft: No recovery (SP-SM) 119.5ft: Switch sampling method to SPT 119.5ft medium dense	
-125.6	124.5	8	23	21									124.5ft: light gray (2.5Y7/2), dense, friable cemented sand fragments Boring Terminated at Elevation -127.1 ft	

TURKEY POINT COL BORE TURKEY POINT COL GDT 10.2.08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: Burroughs/ Liles/ Lehman
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 Marsh Buggy	DRILLER: P. Pitts/ B. Carrasco	GROUND WATER (ft)
BORING NO.: B-636	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 395,715 US ft (NAD83/90)	EASTING: 877,193 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 126.0 ft	CASING DEPTH: 4" to 27.6', 3" to 119.5'	HAMMER (ID): 140 lb. Auto (MEC-425)	
DATE STARTED: 4/23/08	COMPLETED: 5/1/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	RQD (ft) %	SAMP. NO.	REC. (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS
										Begin Coring @ 34.5 ft
-35.6	34.5	5.0	2:02 1:58 2:32 9:10 5:22	(3.6) 72%	(2.2) 44%	RUN-1	(10.6) 82%	(8.6) 66%		LIMESTONE, boundstone, white (10YR8/1), hard, wet, fossiliferous, strong HCl reaction (Upper Fort Thompson Formation) <i>(continued)</i> 34.5ft: white (2.5Y8/1), indurated, some vugs, recrystallized calcite, coralline
-40.6	39.5	5.0	7:22 5:07 7:04 9:34 7:28	(5.0) 100%	(4.8) 96%	RUN-2				39.5ft: mostly vugs
-45.6	44.5	5.0	3:50 2:51 4:17 6:46 3:10	(5.0) 100%	(3.9) 78%	RUN-3				44.5ft: light gray (10Y7/1) to 47.5ft
-50.6	49.5	5.0	8:36 8:23 4:39 3:18 3:58	(5.0) 100%	(3.6) 72%	RUN-4	(51.5) 80%	(38.3) 59%		LIMESTONE, boundstone, white (2.5YR8/1), hard, indurated, few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) 49.5ft: moderately indurated
-55.6	54.5	5.0	5:43 9:03 5:50 4:41 4:06	(4.4) 88%	(3.3) 66%	RUN-5				54.5ft: indurated, trace sand, trace shell molds and casts
-60.6	59.5	5.0	5:22 3:02 2:47 2:10 7:22	(2.7) 54%	(2.2) 44%	RUN-6				59.5ft: moderately hard to hard, moderately indurated to indurated, trace sand
-65.6	64.5	5.0	0:52 1:23 1:10 2:05 6:32	(1.7) 34%	(0.7) 14%	RUN-7				64.5ft: hard, indurated, trace vugs
-70.6	69.5	5.0	2:10 1:42 3:38 7:52 8:04	(4.2) 84%	(2.1) 42%	RUN-8				69.5ft: moderately hard, moderately indurated, little vugs, trace to few shell molds and casts
-75.6	74.5	5.0	3:09 6:31 6:54 3:25 2:54	(3.0) 60%	(1.4) 28%	RUN-9				74.5ft: few vugs, vertical solution cavities
-80.6	79.5	5.0	3:01 4:37 8:36 5:05 0:54	(3.5) 70%	(2.4) 48%	RUN-10				
-85.6	84.5	5.0	4:39 2:28 2:36 1:34 1:47	(3.8) 76%	(2.4) 48%	RUN-11				84.5ft: moderately hard to hard, moderately indurated to indurated, trace vugs
-90.6	89.5	5.0	2:42 3:07 5:13 4:03 2:25	(3.7) 74%	(3.1) 62%	RUN-12				89.5ft: hard, indurated, few vugs, little shell molds and casts
-95.6	94.5	5.0	1:40 2:20 2:29 4:29 4:03	(4.0) 80%	(3.0) 60%	RUN-13				94.5ft: trace vugs
-100.6	99.5	5.0	3:39 3:17 3:12 3:50 4:18	(5.0) 100%	(5.0) 100%	RUN-14				99.5ft: few vugs
-105.6	104.5	5.0	2:40 3:05 3:24 3:34 5:56	(5.0) 100%	(5.0) 100%	RUN-15				
-110.6	109.5									

TURKEY POINT COL CORE TURKEY POINT GP TURKEY POINT COL.GDT 10-2-08

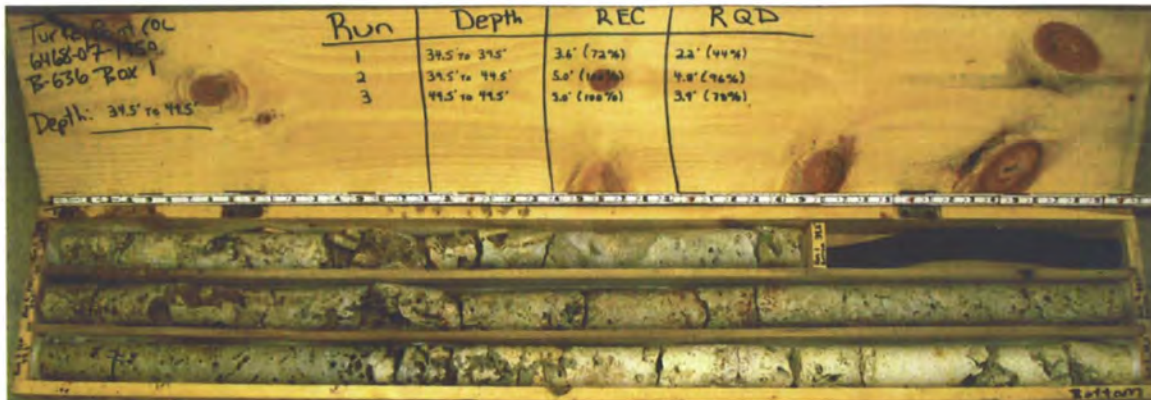


SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: Burroughs/ Liles/ Lehman
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 Marsh Buggy	DRILLER: P. Pitts/ B. Carrasco	GROUND WATER (ft)
BORING NO.: B-636	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 395,715 US ft (NAD83/90)	EASTING: 877,193 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 126.0 ft	CASING DEPTH: 4" to 27.6', 3" to 119.5'	HAMMER (ID): 140 lb. Auto (MEC-425)	
DATE STARTED: 4/23/08	COMPLETED: 5/1/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
		5.0	2.32 5.02 4.20 4.14 3.24	(2.5) 50%	(1.8) 36%	RUN-16				LIMESTONE, boundstone, white (2.5YR8/1), hard, indurated, few vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)
							(0.0) 0%	(NA) 0%		109.5ft: moderately hard, moderately indurated, trace vugs
-115.6	114.5									POORLY GRADED SAND with silt (SP-SM), light yellowish brown (2.5YR6/3), wet, strong HCl reaction, fine grained sand, trace shell fragments (Tamiami Formation)
		5.0	1.18 1.36 1.30 2.36 2.24	(0.0) 0%	(0.0) 0%	RUN-17				114.5ft: No recovery (SP-SM)
-120.6	119.5									
										Coring Terminated at Elevation -120.6

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 10/2/08



B-636 - Box 1



B-636 - Box 2



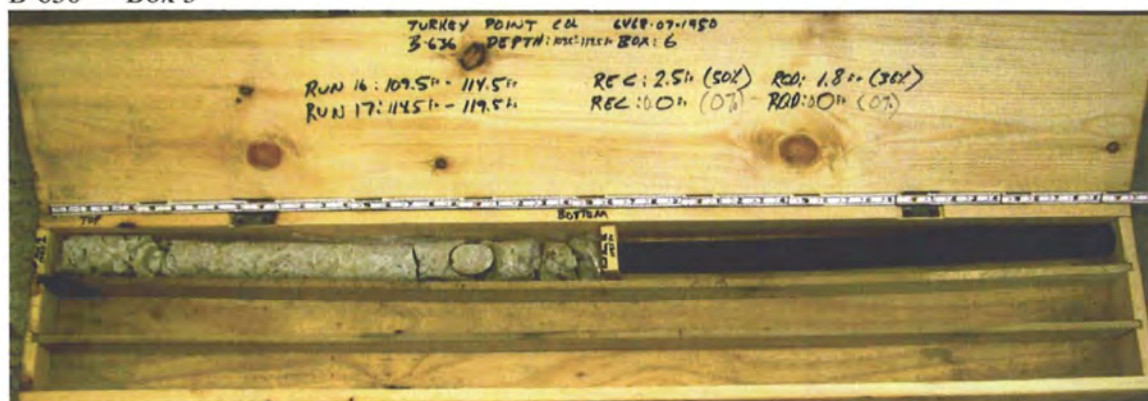
B-636 - Box 3



B-636 - Box 4



B-636 - Box 5



B-636 - Box 6



GEOTECHNICAL BORING LOG

Prepared By DP2 Date 5-20-08

Checked By [Signature] Date 5-30-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade		GEOLOGIST: S. Lehman			
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-55 Marsh Buggy					DRILLER: P. Pitts/ B. Carrasco			GROUND WATER (ft) 0 HR. NA 24 HR. NA		
BORING NO.: B-637					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					
GROUND ELEV.: -0.2 ft (NAVD88)					NORTHING: 395,693 US ft (NAD83/90)					EASTING: 877,310 US ft (NAD83/90)					
TOTAL DEPTH: 150.0 ft			BORING DIAMETER: 4" to 47.2', 3" to 150.0'					CASING DEPTH: 4" to 47.2', 3" to 121.5'			HAMMER (ID): 140 lb. Auto (MEC-425)				
DATE STARTED: 5/2/08			COMPLETED: 5/6/08			CORE SIZE: HQ3			BITS USED: 3 7/8" Roller Cone						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-0.2					Ground Surface										
-0.2	0.0	WOH	WOH	WOH	0						637-1		-0.2	0.0	MUCK, very dark grayish brown (2.5Y3/2), very soft, moist, strong HCl reaction
-3.7	3.5	1	4	25							637-2		-4.2	4.0	Field notes do not indicate sample 637-2 was split into separate jars
-6.2	6.0	10	11	17							637-3				LIMESTONE, boundstone, white (2.5Y8/1), soft, moderately indurated, wet, strong HCl reaction, oolitic (Miami Formation)
-8.5	8.3	14	6	3							637-4				8.3ft: very soft
-11.5	11.3	5	3	3							637-5				
-13.7	13.5	6	50/0.3							56/0.8	637-6				13.5ft: white (2.5Y8/1), to light gray (2.5Y7/1), hard, indurated
-18.8	18.6	4	5	11							637-7				18.6ft: very soft, friable to moderately indurated
-23.8	23.6	5	8	10							637-8				23.6ft: moderately indurated
-28.8	28.6	WOR	WOR	4							637-9				28.6 to 30.6ft: rod drop
-33.8	33.6	35	18	11							637-10		-33.2	33.0	LIMESTONE, boundstone, white (2.5Y8/1), soft, wet, moderately indurated, strong HCl reaction, little medium to coarse sand (Upper Fort Thompson Formation)
-35.3	35.1										RUN-1				35.1ft: Switch sampling method to coring
-40.3	40.1										RUN-2				35.1ft: hard, indurated, recrystallized calcite, little vugs
-45.3	45.1										RUN-3				40.1ft: white (2.5Y8/1), to gray (2.5Y5/1), few vugs, coralline
-50.3	50.1										RUN-4		-47.8	47.6	45.1ft: gray (2.5Y5/1), fossiliferous, trace vugs, to 47.6ft
-55.3	55.1										RUN-5				LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, trace vugs, strong HCl reaction (Lower Fort Thompson Formation)
-60.3	60.1										RUN-6				50.1ft: few vugs
-65.3	65.1										RUN-7				65.1ft: moderately indurated to indurated, trace vugs, trace to few sand
-70.3	70.1										RUN-8				70.1ft: indurated, few vugs, few shell molds and casts
-75.0	74.8														

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: S. Lehman	
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-55 Marsh Buggy		DRILLER: P. Pitts/ B. Carrasco		GROUND WATER (ft)	
BORING NO.: B-637		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: -0.2 ft (NAVD88)		NORTHING: 395,693 US ft (NAD83/90)		EASTING: 877,310 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 150.0 ft		BORING DIAMETER: 4" to 47.2', 3" to 150.0'		CASING DEPTH: 4" to 47.2', 3" to 121.5'		HAMMER (ID): 140 lb. Auto (MEC-425)	
DATE STARTED: 5/2/08		COMPLETED: 5/6/08		CORE SIZE: HQ3		BITS USED: 3 7/8" Roller Cone	

ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-75.0					Continued from previous page								
-80.0	79.8										RUN-9		74.8ft: moderately hard, moderately indurated, few vugs, few to little shell molds and casts
-85.0	84.8										RUN-10		LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-90.0	89.8										RUN-11		79.8ft: medium hard to hard, moderately indurated to indurated, few vugs
-95.0	94.8										RUN-12		84.8ft: moderately hard, moderately indurated, trace vugs, trace shell molds
-100.0	99.8										RUN-13		89.8ft: little shell molds and casts
-105.0	104.8										RUN-14		94.8ft: hard, indurated, few shell molds and casts
-110.0	109.8										RUN-15		99.8ft: moderately hard to hard, moderately indurated to indurated, few to little shell molds
-115.0	114.8										RUN-16		104.8ft: indurated
-121.7	121.5	16	10	12							RUN-17		109.8ft: moderately hard, moderately indurated, some sand, few vugs, trace shell molds and casts
-128.7	128.5	7	13	26							637-11		116.2 POORLY GRADED SAND with silt (SP-SM), greenish gray (10Y6/1), wet, strong HCl reaction, fine grained sand, trace shell fragments (Tamiami Formation)
-138.7	138.5	3	4	18							637-12		121.5ft: Switch sampling method to SPT 121.5ft: medium dense
-148.7	148.5	13	21	30							637-13		128.5ft: dense
											637-14		134.2 Silty SAND (SM), greenish gray (10Y6/1), medium dense, wet, strong HCl reaction, fine grained sand, cemented sand fragments

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: S. Lehman								
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-55 Marsh Buggy		DRILLER: P. Pitts/ B. Carrasco		GROUND WATER (ft)								
BORING NO.: B-637		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA								
GROUND ELEV.: -0.2 ft (NAVD88)		NORTHING: 395,693 US ft (NAD83/90)		EASTING: 877,310 US ft (NAD83/90)		24 HR. NA								
TOTAL DEPTH: 150.0 ft		BORING DIAMETER: 4" to 47.2', 3" to 150.0'		CASING DEPTH: 4" to 47.2', 3" to 121.5'		HAMMER (ID):140 lb. Auto (MEC-425)								
DATE STARTED: 5/2/08		COMPLETED: 5/6/08		CORE SIZE: HQ3		BITS USED: 3 7/8" Roller Cone								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				
-149.8					Continued from previous page									
														148.5ft: very dense Boring Terminated at Elevation -150.2 ft

TURKEY POINT COL BORE: TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: S. Lehman			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-55 Marsh Buggy				DRILLER: P. Pitts/ B. Carrasco				GROUND WATER (ft)	
BORING NO.: B-637				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -0.2 ft (NAVD88)				NORTHING: 395,693 US ft (NAD83/90)				EASTING: 877,310 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 150.0 ft				CASING DEPTH: 4" to 47.2', 3" to 121.5'						HAMMER (ID): 140 lb. Auto (MEC-425)			
DATE STARTED: 5/2/08		COMPLETED: 5/6/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %RQD (ft) %		SAMP. NO.	STRATA REC (ft) %RQD (ft) %		L O G	DESCRIPTION AND REMARKS			
										Begin Coring @ 35.1 ft			
-35.3	35.1	5.0	4:43 4:45 4:23 4:14 5:48	(4.2) 84%	(4.0) 80%	RUN-1	(11.6) 93%	(11.4) 91%		LIMESTONE, boundstone, white (2.5Y8/1), soft, wet, moderately indurated, strong HCl reaction, little medium to coarse sand (Upper Fort Thompson Formation) (continued)			
-40.3	40.1	5.0	5:56 4:16 4:32 7:14 10:28	(4.9) 98%	(4.9) 98%	RUN-2				35.1ft: hard, indurated, recrystallized calcite, little vugs 40.1ft: white (2.5Y8/1), to gray (2.5Y5/1), few vugs, coralline			
-45.3	45.1	5.0	8:33 6:30 2:21 3:10 2:29	(5.0) 100%	(4.7) 94%	RUN-3				45.1ft: gray (2.5Y5/1), fossiliferous, trace vugs, to 47.6ft			
-50.3	50.1	5.0	4:50 4:00 4:26 4:30 3:50	(4.5) 90%	(4.2) 84%	RUN-4	(55.1) 81%	(41.8) 61%		LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, trace vugs, strong HCl reaction (Lower Fort Thompson Formation)			
-55.3	55.1	5.0	4:50 8:24 11:43 16:56 5:26	(5.0) 100%	(4.0) 80%	RUN-5				50.1ft: few vugs			
-60.3	60.1	5.0	4:10 0:42 4:05 4:27 4:39	(3.6) 72%	(2.4) 48%	RUN-6							
-65.3	65.1	5.0	1:40 0:13 0:56 0:30 6:29	(1.4) 28%	(0.6) 12%	RUN-7				65.1ft: moderately indurated to indurated, trace vugs, trace to few sand			
-70.3	70.1	4.7	2:52/0.7 4:07 3:35 14:50 10:23	(3.4) 72%	(1.6) 34%	RUN-8				70.1ft: indurated, few vugs, few shell molds and casts			
-75.0	74.8	5.0	3:53 8:06 7:44 5:07 2:46	(3.7) 74%	(2.9) 58%	RUN-9				74.8ft: moderately hard, moderately indurated, few vugs, few to little shell molds and casts			
-80.0	79.8	5.0	6:51 7:59 2:36 5:47 6:10	(3.0) 60%	(1.1) 22%	RUN-10				79.8ft: medium hard to hard, moderately indurated to indurated, few vugs			
-85.0	84.8	5.0	2:08 2:54 3:08 4:22 3:58	(4.4) 88%	(3.7) 74%	RUN-11				84.8ft: moderately hard, moderately indurated, trace vugs, trace shell molds			
-90.0	89.8	5.0	3:08 4:13 3:51 5:10 7:56	(5.0) 100%	(5.0) 100%	RUN-12				89.8ft: little shell molds and casts			
-95.0	94.8	5.0	4:33 3:19 2:50 4:37 6:35	(4.0) 80%	(1.4) 28%	RUN-13				94.8ft: hard, indurated, few shell molds and casts			
-100.0	99.8	5.0	4:18 6:42 3:33 3:07 4:15	(5.0) 100%	(4.7) 94%	RUN-14				99.8ft: moderately hard to hard, moderately indurated to indurated, few to little shell molds			
-105.0	104.8	5.0	5:13 2:55 5:30 5:34 3:43	(4.8) 96%	(4.8) 96%	RUN-15				104.8ft: indurated			
-110.0	109.8												

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDI 5.30.08



SHEET 2 OF 2

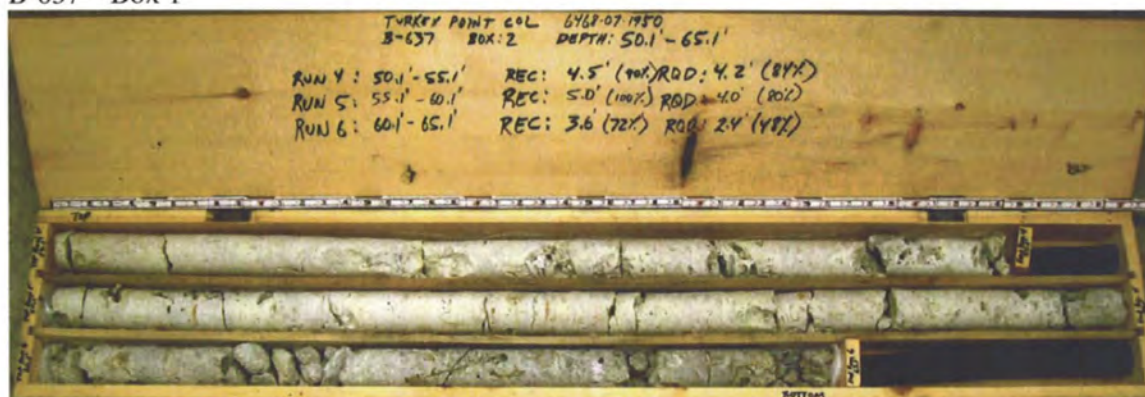
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Lehman
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-55 Marsh Buggy	DRILLER: P. Pitts/ B. Carrasco	GROUND WATER (ft)
BORING NO.: B-637	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -0.2 ft (NAVD88)	NORTHING: 395,693 US ft (NAD83/90)	EASTING: 877,310 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.0 ft	CASING DEPTH: 4" to 47.2', 3" to 121.5'	HAMMER (ID): 140 lb. Auto (MEC-425)	
DATE STARTED: 5/2/08	COMPLETED: 5/6/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-115.0	114.8	5.0	3.49 3.31 3.16 4.12 2.52	(4.0) 80%	(2.8) 56%	RUN-16				109.8ft: moderately hard, moderately indurated, some sand, few vugs, trace shell molds and casts LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, fossiliferous, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-120.0	119.8	5.0	1.54 3.55 3.40 5.06 2.08	(0.8) 16%	(0.4) 8%	RUN-17	(0.0) 0%	(NA)		POORLY GRADED SAND with silt (SP-SM), greenish gray (10Y6/1), wet, strong HCl reaction, fine grained sand, trace shell fragments (Tamiami Formation)
										Coring Terminated at Elevation -120.0

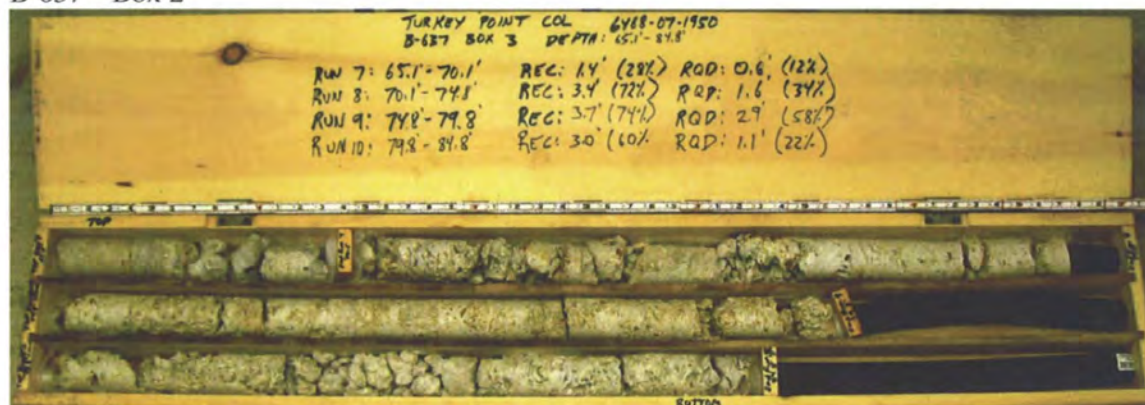
TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



B-637 - Box 1



B-637 - Box 2



B-637 - Box 3



B-637 - Box 4



B-637 - Box 5



GEOTECHNICAL BORING LOG

Prepared By JPJ Date 5-30-08Checked By JPJ Date 5-30-08

SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade		GEOLOGIST: L. Bisson			
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550 (ATL)					DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)	
BORING NO.: B-639					DRILL METHOD: Mud Rotary/Core					SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)					NORTHING: 396,964 US ft (NAD83/90)					EASTING: 876,998 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 102.6 ft			BORING DIAMETER: 4" to 102.6'					CASING DEPTH: 4" to 15.0'				HAMMER (ID): 140 lb. Auto (MEC-03)			
DATE STARTED: 3/22/08			COMPLETED: 3/24/08			CORE SIZE: HQ3			BITS USED: 4" Roller Cone						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-1.4					Ground Surface										
-1.4	0.0	WOR	WOR	WOR	0						639-1		-1.4	0.0	MUCK, black (10YR2/1), very soft, wet, organic, trace shells
-3.9	2.5										639-2A&B		-4.4	3.0	
-6.4	5.0	2	6	20							639-3				LIMESTONE, boundstone, light gray (2.5Y7/2), soft, wet, sandy, fossiliferous, oolitic (Miami Formation) 5.0ft: pale yellow (2.5Y8/2), very soft
-8.9	7.5	7	9	8							639-4				
-11.4	10.0	6	8	4							639-5				10.0ft: white (10YR8/1)
-13.9	12.5	4	5	6							639-6				
-16.4	15.0	10	10	8							639-7				15.0ft: white (2.5Y8/1), to light gray (2.5Y7/1), hard 16.3ft: Switch sampling method to coring 16.3ft: moderately hard, moderately indurated 17.6ft: soft to medium hard, trace sand
-17.7	16.3	5	12	50/0.3							RUN-1				
-19.0	17.6										RUN-2				
											RUN-3				
-24.0	22.6												-25.4	24.0	LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, few vugs, trace sand, trace recrystallized calcite, fossiliferous, strong HCl reaction, coralline (Upper Fort Thompson Formation)
-29.0	27.6										RUN-4				
-34.0	32.6										RUN-5				32.6ft: trace vugs
-39.0	37.6										RUN-6				
-44.0	42.6										RUN-7				42.6ft: white (2.5Y8/1) to 45.7ft then gray (10YR6/1), to light gray (10YR7/1), little to trace vugs
-49.0	47.6										RUN-8		-49.0	47.6	
-54.0	52.6										RUN-9				LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, trace vugs, few gastropod shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) 52.6ft: trace shell molds
-59.0	57.6										RUN-10				
-64.0	62.6										RUN-11				57.6ft: white (2.5Y8/1), to light gray (2.5Y7/1), moderately hard, sandy 62.6ft: white (2.5Y8/1) 52.6 to 74.6ft: possible interbedded sand lenses
-69.0	67.6										RUN-12				
-70.0	68.6										RUN-13				
-74.0	72.6										RUN-14				
-76.0	74.6														

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: L. Bisson										
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550 (ATL)		DRILLER: L. Carter/ J. Landeros		GROUND WATER (ft)										
BORING NO.: B-639		DRILL METHOD: Mud Rotary/Core		SAMPLE METHODS: SPT/Core		0 HR. NA										
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,964 US ft (NAD83/90)		EASTING: 876,998 US ft (NAD83/90)		24 HR. NA										
TOTAL DEPTH: 102.6 ft		BORING DIAMETER: 4" to 102.6'		CASING DEPTH: 4" to 15.0'		HAMMER (ID): 140 lb. Auto (MEC-03)										
DATE STARTED: 3/22/08		COMPLETED: 3/24/08		CORE SIZE: HQ3		BITS USED: 4" Roller Cone										
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100						
-76.2					Continued from previous page											
-79.0	77.6										RUN-15			76.4ft: white (2.5Y8/1), to light gray (2.5Y7/1), hard, indurated LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, trace vugs, few gastropod shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) (continued) 77.6ft: white (2.5Y8/1), few to little shell molds and casts		
											RUN-16					
-84.0	82.6										RUN-17					
-89.0	87.6										RUN-18					
-94.0	92.6										RUN-19					
-99.0	97.6										RUN-20			97.6ft: trace vugs		
														-104.0	102.6	Boring Terminated at Elevation -104.0 ft

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL GDT 5/30/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: L. Bisson			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (ATL)				DRILLER: L. Carter/ J. Landeros				GROUND WATER (ft)	
BORING NO.: B-639				DRILL METHOD: Mud Rotary/Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 396,964 US ft (NAD83/90)				EASTING: 876,998 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 102.6 ft				CASING DEPTH: 4" to 15.0'						HAMMER (ID): 140 lb. Auto (MEC-03)			
DATE STARTED: 3/22/08		COMPLETED: 3/24/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) % ROD (ft) %		SAMP. NO.	STRATA REC (ft) % ROD (ft) %		L O G	DESCRIPTION AND REMARKS			
										Begin Coring @ 16.3 ft			
-17.7	16.3	1.3	1:32	(1.0)	(0.5)	RUN-1	(4.5)	(1.1)		LIMESTONE, boundstone, light gray (2.5Y7/2), soft, wet, sandy, fossiliferous, oolitic (Miami Formation) (continued)			
-19.0	17.6	5.0	0:48/0.3	77%	38%	RUN-2	58%	14%		16.3ft: moderately hard, moderately indurated			
			0:59	(2.5)	(0.6)					17.6ft: soft to medium hard, trace sand			
			1:13	50%	12%								
			1:36										
			0:43										
-24.0	22.6		0:17										
		5.0	0:45	(4.2)	(2.7)	RUN-3				-25.4	22.0ft: loss of circulation		
			0:13	84%	54%		(23.2)	(21.6)					
			1:31				98%	92%			LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, few vugs, trace sand, trace recrystallized calcite, fossiliferous, strong HCl reaction, coralline (Upper Fort Thompson Formation)		
			1:13										
-29.0	27.6	5.0	2:33	(5.0)	(4.7)	RUN-4							
			1:03	100%	94%								
			1:08										
			1:27										
			1:59										
-34.0	32.6	5.0	1:37	(5.0)	(4.8)	RUN-5					32.6ft: trace vugs		
			1:11	100%	96%								
			1:07										
			1:09										
			1:05										
-39.0	37.6	5.0	1:26	(5.0)	(4.6)	RUN-6							
			0:36	100%	92%								
			1:29										
			0:45										
			1:22										
-44.0	42.6	5.0	1:23	(5.0)	(4.8)	RUN-7					42.6ft: white (2.5Y8/1) to 45.7ft then gray (10YR6/1), to light gray (10YR7/1), little to trace vugs		
			1:01	100%	96%								
			1:32										
			1:35										
			2:08										
-49.0	47.6	5.0	2:07	(5.0)	(5.0)	RUN-8	(44.9)	(27.3)		-49.0	47.6		
			0:59	100%	100%		82%	50%			LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, trace vugs, few gastropod shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation)		
			2:08										
			1:32										
-54.0	52.6	5.0	1:06	(5.0)	(4.1)	RUN-9					52.6ft: trace shell molds		
			1:13	100%	82%								
			0:36										
			0:53										
			0:42										
-59.0	57.6	5.0	1:20	(3.8)	(1.6)	RUN-10					57.6ft: white (2.5Y8/1), to light gray (2.5Y7/1), moderately hard, sandy		
			1:05	76%	32%								
			1:06										
			0:29										
			0:43										
-64.0	62.6	5.0	0:13	(1.8)	(0.0)	RUN-11					62.6ft: white (2.5Y8/1)		
			0:36	36%	0%						52.6 to 74.6ft: possible interbedded sand lenses		
			0:31										
			0:27										
			0:40										
-69.0	67.6	5.0	0:25	(0.9)	(0.0)	RUN-12							
			0:29	90%	0%								
-70.0	68.6	1.0	2:00	(0.9)	(0.0)	RUN-13							
		4.0	0:58	90%	0%								
			0:10	(2.4)	(0.8)								
			0:24	60%	20%								
-74.0	72.6	2.0	2:04	(1.5)	(0.0)	RUN-14							
			0:30	75%	0%								
-76.0	74.6	3.0	3:47	(3.0)	(1.9)	RUN-15					76.4ft: white (2.5Y8/1), to light gray (2.5Y7/1), hard, indurated		
			1:27	100%	63%								
			1:04										
-79.0	77.6	5.0	1:31	(5.0)	(3.7)	RUN-16					77.6ft: white (2.5Y8/1), few to little shell molds and casts		
			0:56	100%	74%								
			0:45										
			0:43										
-84.0	82.6	5.0	0:58	(4.1)	(2.3)	RUN-17							
			0:49	82%	46%								
			0:14										
			1:07										
			0:53										
-89.0	87.6	5.0	1:06	(4.0)	(2.3)	RUN-18					87.6ft: few vugs, few shell molds and casts		
			0:59	80%	46%								
			0:16										
			0:46										

TURKEY POINT COL CORE TURKEY POINT G.P.I. TURKEY POINT COL GDT 5/30/08

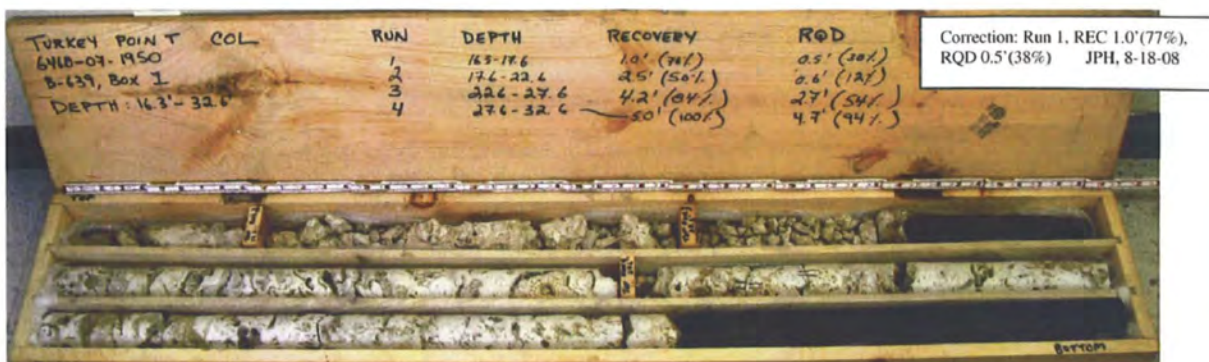


SHEET 2 OF 2

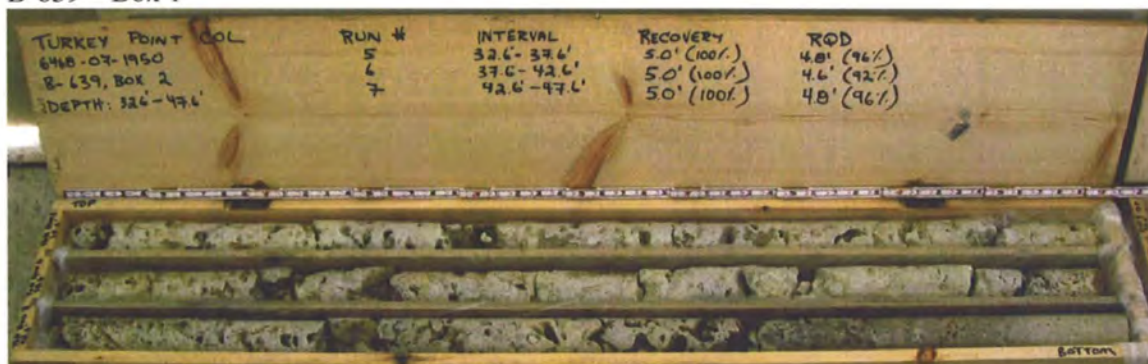
BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: L. Bisson	
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550 (ATL)		DRILLER: L. Carter/ J. Landeros		GROUND WATER (ft)	
BORING NO.: B-639		DRILL METHOD: Mud Rotary/Core		SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,964 US ft (NAD83/90)		EASTING: 876,998 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 102.6 ft		CASING DEPTH: 4" to 15.0'				HAMMER (ID): 140 lb. Auto (MEC-03)	
DATE STARTED: 3/22/08		COMPLETED: 3/24/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)	

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Continued from previous page
-94.0	92.6	5.0	1:16 0:30	(4.3) 86%	(2.9) 58%	RUN-19				LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, trace vugs, few gastropod shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-99.0	97.6	5.0	0:45 0:36 1:11 0:58 0:32	(4.1) 82%	(2.7) 54%	RUN-20				97.6ft: trace vugs
-104.0	102.6		0:57 1:38 1:05 1:35 1:32							Coring Terminated at Elevation -104.0

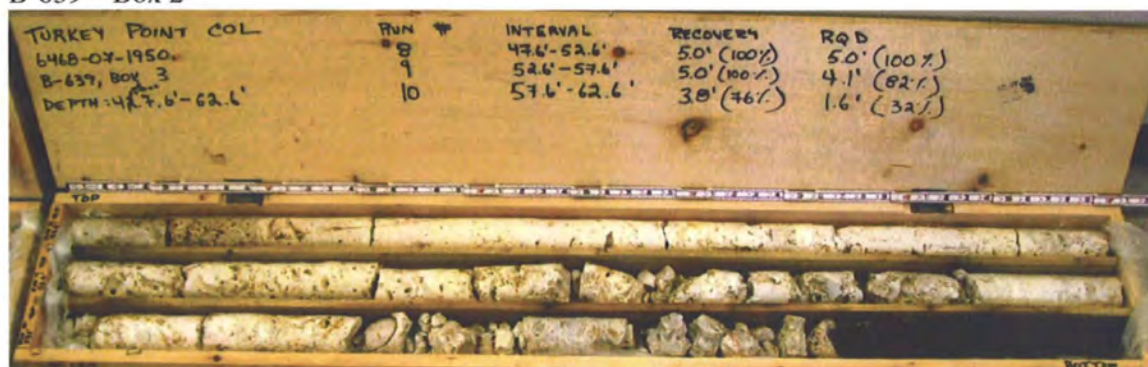
TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDI 5.30.08



B-639 - Box 1



B-639 - Box 2



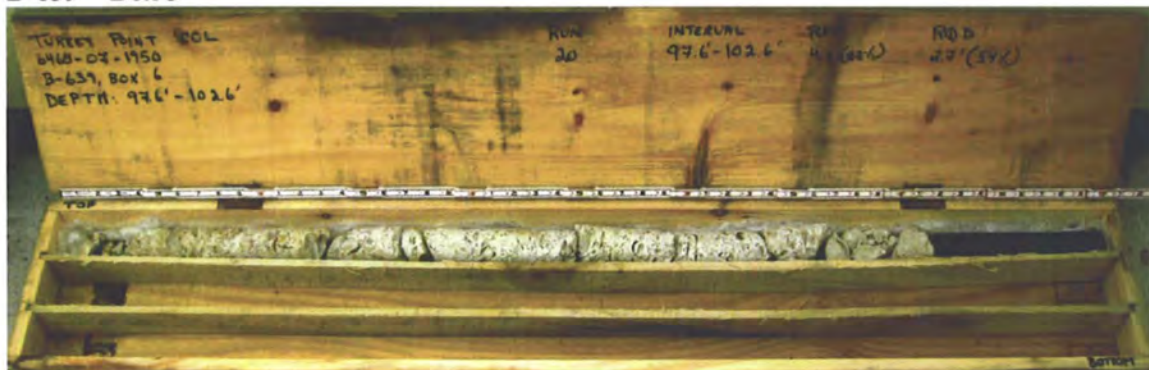
B-639 - Box 3



B-639 - Box 4



B-639 - Box 5



B-639 - Box 6



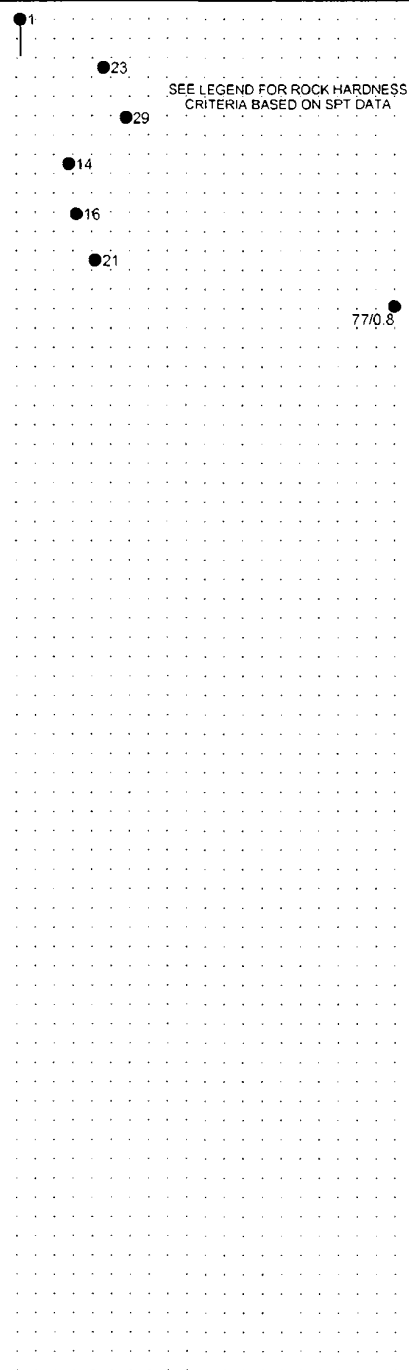
Revised
9/25/08

GEOTECHNICAL BORING LOG

Prepared By MR Date 9/25/08

Checked By CA Date 9/25/08

SHEET 1 OF 9

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: R. Clark				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-750 (Miller)					DRILLER: G.Bilbrey/P.McKorkle/J.Tucker					GROUND WATER (ft) 0 HR. NA 24 HR. NA		
BORING NO.: B-701(DH)					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core							
GROUND ELEV.: -1.1 ft (NAVD88)					NORTHING: 396,976 US ft (NAD83/90)					EASTING: 875,792 US ft (NAD83/90)							
TOTAL DEPTH: 615.5 ft					BORING DIAMETER: 6" to 16.0', 4" to 615.5'					CASING DEPTH: 6" to 16.0', 4" to 457.5'					HAMMER (ID):140 lb. Auto (07)		
DATE STARTED: 4/3/08					COMPLETED: 5/5/08					CORE SIZE: PQ3/HQ3					BITS USED: 6 7/8" & 3 7/8" Tricone, 3 7/8" wingbit		
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	MOI	LOG	SOIL AND ROCK DESCRIPTION				
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					NO.		
-1.1					Ground Surface												
-1.1	0.0	WOH	WOH	1						701(DH)-1		-1.1	0.0	MUCK, olive gray (5Y5/2), to black (5Y2.5/1), very soft, wet, mostly organic, strong HCl reaction LIMESTONE, boundstone, pale yellow (5Y8/2), soft, friable, strong HCl reaction, wet, some sand, oolitic (Miami Formation) 5.1ft: pale yellow (5Y8/2), to white (5Y8/1), trace shell fragments 7.5ft: white (5Y8/1), very soft, some sand 12.5ft: soft 15.1ft: hard 16.0ft: Switched sampling method to coring 16.0ft: friable to indurated, trace locally interconnected vugs, recrystallized calcite 20.5 to 22.0ft: fragmented zone LIMESTONE, boundstone, white (5Y8/1), hard, indurated, wet, strong HCl reaction, few vugs, porous, fossiliferous, few shell molds and casts, recrystallized calcite (Upper Fort Thompson Formation) 24.5ft: loss of circulation 25.5ft: few to little vugs, mostly shell molds and casts 30.5ft: soft to hard, friable to indurated, coralline 35.5ft: hard, indurated 40.5ft: soft to hard, friable to indurated, few vugs 45.5ft: gray (5Y6/1), hard, indurated to 47.8ft LIMESTONE, boundstone, white (5Y8/1), to very pale brown (10YR8/3), hard, indurated, fossiliferous, little gastropod shell molds and cast, few vugs, strong HCl reaction (Lower Fort Thompson Formation) 50.5ft: white (5Y8/1) 55.5ft: trace to little sand 65.5ft: very soft to hard, friable to indurated 70.5ft: hard, indurated			
-3.6	2.5	11	8	15							701(DH)-2A&B		-4.0		2.9		
-6.2	5.1	17	14	15							701(DH)-3						
-8.6	7.5	8	7	7							701(DH)-4						
-11.2	10.1	4	7	9							701(DH)-5						
-13.6	12.5	10	15	6							701(DH)-6						
-16.2	15.1	27	50/0.3								701(DH)-7						
-17.1	16.0										77/0.8	RUN-1					
-21.6	20.5										RUN-2		-23.1		22.0		
-26.6	25.5										RUN-3						
						701(DH)-CS-01											
-31.6	30.5					RUN-4											
-36.6	35.5					RUN-5											
-41.6	40.5					RUN-6											
						701(DH)-CS-02											
-46.6	45.5					RUN-7		-48.9	47.8								
-51.6	50.5					RUN-8											
						701(DH)-CS-03											
-56.6	55.5					RUN-9											
-61.6	60.5					RUN-10											
						701(DH)-CS-04											
-66.6	65.5					701(DH)-CS-05											
-71.6	70.5					RUN-11											
						RUN-12											

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL.GDT 9/25/08



SHEET 2 OF 9

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: R. Clark				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-750 (Miller)					DRILLER: G.Bilbrey/P.McKorkle/J.Tucker					GROUND WATER (ft)		
BORING NO.: B-701(DH)					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA		
GROUND ELEV.: -1.1 ft (NAVD88)					NORTHING: 396,976 US ft (NAD83/90)					EASTING: 875,792 US ft (NAD83/90)					24 HR. NA		
TOTAL DEPTH: 615.5 ft					BORING DIAMETER: 6" to 16.0', 4" to 615.5'					CASING DEPTH: 6" to 16.0', 4" to 457.5'					HAMMER (ID):140 lb. Auto (07)		
DATE STARTED: 4/3/08					COMPLETED: 5/5/08					CORE SIZE: PQ3/HQ3					BITS USED: 6 7/8" & 3 7/8" Tricone, 3 7/8" wingbit		
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	MOI	LOG	SOIL AND ROCK DESCRIPTION				
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				NO.			
-75.9					Continued from previous page												
-76.6	75.5										701(DH)-CS-06 RUN-13		LIMESTONE, boundstone, white (5Y8/1), to very pale brown (10YR8/3), hard, indurated, fossiliferous, little gastropod shell molds and cast, few vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)				
-81.6	80.5										RUN-14		83.5 to 84.5ft: soft, friable zone				
-86.6	85.5										RUN-15						
-91.6	90.5										RUN-16		90.5ft: soft to hard, friable to indurated, sandy				
-96.6	95.5										RUN-17		95.5ft: moderately hard, moderately indurated 96.0 to 98.5ft: soft, friable, sandy zone				
-101.6	100.5										RUN-18		100.5ft: hard, indurated, few to little vugs				
-106.6	105.5										RUN-19		105.5ft: very soft to hard, friable to indurated				
-111.6	110.5										RUN-20		110.5ft: hard, indurated, some sand				
-116.6	115.5	2	5	4							701(DH)-8		115.5ft: Switched sampling method to SPT Silty SAND (SM), white (5Y8/1), loose, wet, strong HCl reaction, trace shell fragments, fine to coarse grained sand, few fine gravel-sized cemented sand fragments (Tamiami Formation)				
-123.8	122.7	3	4	6							701(DH)-9		122.7ft: mostly fine grained sand				
-128.6	127.5	4	5	5							701(DH)-10		127.5ft: light olive gray (5Y6/2), trace gravel-sized cemented sand fragments				
-138.6	137.5	8	5	6							701(DH)-11		137.5ft: gray (5Y6/1), medium dense				
-148.6	147.5	5	4	10							701(DH)-12		147.5ft: olive gray (5Y5/2)				

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 9/25/08



SHEET 3 OF 9

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)	
BORING NO.: B-701(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.1 ft (NAVD88)				NORTHING: 396,976 US ft (NAD83/90)				EASTING: 875,792 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 615.5 ft				BORING DIAMETER: 6" to 16.0', 4" to 615.5'				CASING DEPTH: 6" to 16.0', 4" to 457.5'				HAMMER (ID):140 lb. Auto (07)	
DATE STARTED: 4/3/08				COMPLETED: 5/5/08				CORE SIZE: PQ3/HQ3				BITS USED: 6 7/8" & 3 7/8" Tricone, 3 7/8" wingbit	
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	LOG	SOIL AND ROCK DESCRIPTION	
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			NO.
-150.7					Continued from previous page								
-158.6	157.5	3	5	8						701(DH)-13		115.5ft: Switched sampling method to SPT Silty SAND (SM), white (5Y8/1), loose, wet, strong HCl reaction, trace shell fragments, fine to coarse grained sand, few fine gravel-sized cemented sand fragments (Tamiami Formation) (continued)	
-168.6	167.5	3	6	9						701(DH)-14		157.5ft: light olive gray (5Y6/2)	
-173.6	172.5	2	4	8						701(DH)-15		167.5ft: no recovery	
-178.6	177.5	3	3	6						701(DH)-16		-173.6 172.5 Sandy SILT (ML), olive gray (5Y5/2), stiff, moist, mostly fine grained sand	
-188.6	187.5	4	5	8						701(DH)-17			
-198.7	197.6	3	4	5						701(DH)-18		gray (5Y6/1), stiff, wet, strong HCl reaction, fine grained sand, trace gravel-sized cemented sand fragments	
-208.7	207.6	4	3	4						701(DH)-19		-206.1 205.0 Silty SAND (SM), gray (5Y6/1), loose, wet, fine to medium grained sand, little fines, strong HCl reaction	
-218.6	217.5	10	11	17						701(DH)-20		217.5ft: olive (5Y5/3), medium dense, some fines	
												-223.6 222.5	

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GPJ 9/25/08



SHEET 4 OF 9

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: R. Clark				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-750 (Miller)			DRILLER: G.Bilbrey/P.McKorkle/J.Tucker			GROUND WATER (ft)				
BORING NO.: B-701(DH)			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: -1.1 ft (NAVD88)			NORTHING: 396,976 US ft (NAD83/90)			EASTING: 875,792 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 615.5 ft			BORING DIAMETER: 6" to 16.0', 4" to 615.5'			CASING DEPTH: 6" to 16.0', 4" to 457.5'			HAMMER (ID): 140 lb. Auto (07)				
DATE STARTED: 4/3/08			COMPLETED: 5/5/08			CORE SIZE: PQ3/HQ3			BITS USED: 6 7/8" & 3 7/8" Tricone, 3 7/8" wingbit				
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-225.5					Continued from previous page								
-228.6	227.5	15	12	22							701(DH)-21		Silty SAND (SM), olive gray (5Y5/2), dense, wet, strong HCl reaction, fine grained sand, little silt (Hawthorn Group) (continued)
-238.6	237.5	12	14	21							701(DH)-22		
-248.6	247.5	5	8	17							701(DH)-23		247.5ft: gray (5Y5/1) medium dense
-258.6	257.5	8	11	22							701(DH)-24		257.5ft: greenish gray (10Y6/1), dense
-268.6	267.5	8	13	20							701(DH)-25		
-278.6	277.5	5	10	24							701(DH)-26		277.5ft: dark greenish gray (10Y4/1)
-288.6	287.5	7	9	21							701(DH)-27		287.5ft: medium dense
-298.6	297.5	7	14	26							701(DH)-28		297.5ft: olive gray (5Y5/2), dense, fine to

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 9/25/08



SHEET 5 OF 9

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-750 (Miller)					DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)	
BORING NO.: B-701(DH)					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.1 ft (NAVD88)					NORTHING: 396,976 US ft (NAD83/90)					EASTING: 875,792 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 615.5 ft			BORING DIAMETER: 6" to 16.0', 4" to 615.5'					CASING DEPTH: 6" to 16.0', 4" to 457.5'				HAMMER (ID):140 lb. Auto (07)			
DATE STARTED: 4/3/08			COMPLETED: 5/5/08			CORE SIZE: PQ3/HQ3				BITS USED: 6 7/8" & 3 7/8" Tricone, 3 7/8" wingbit					
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT						SAMP.	LOG	SOIL AND ROCK DESCRIPTION		
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO.			MOI	
-300.3					Continued from previous page										
														medium grained sand Silty SAND (SM), olive gray (5Y5/2), dense, wet, strong HCl reaction, fine grained sand, little silt (Hawthorn Group) (continued)	
-308.6	307.5													307.5ft: olive (5Y5/3)	
		10	12	21											
-318.6	317.5													317.5ft: light gray (5Y7/2), very dense, weak HCl reaction	
		16	50/0.4												
-328.6	327.5													327.5ft: light gray (5Y7/1)	
		41	50/0.4												
-338.6	327.5														
		41	50/0.4												
-338.7	337.6													337.6ft: gray (5Y6/1)	
		42	50/0.4												
-348.6	347.5													POORLY GRADED SAND with silt (SP-SM), gray (5Y6/1), very dense, wet, fine grained sand, few fines, weak HCl reaction	
		32	48	50/0.4											
-358.6	357.5													357.5ft: light olive gray (5Y6/2)	
		31	50	50/0.4											
-368.6	367.5													367.5ft: gray (5Y6/1)	
		8	38	50/0.3											

TURKEY POINT COL BORE TURKEY POINT COL GDT 9/25/08



SHEET 6 OF 9

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-750 (Miller)					DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)	
BORING NO.: B-701(DH)					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.1 ft (NAVD88)					NORTHING: 396,976 US ft (NAD83/90)					EASTING: 875,792 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 615.5 ft			BORING DIAMETER: 6" to 16.0', 4" to 615.5'					CASING DEPTH: 6" to 16.0', 4" to 457.5'				HAMMER (ID):140 lb. Auto (07)			
DATE STARTED: 4/3/08			COMPLETED: 5/5/08			CORE SIZE: PQ3/HQ3			BITS USED: 6 7/8" & 3 7/8" Tricone, 3 7/8" wingbit						
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	▼ MOI	LOG	SOIL AND ROCK DESCRIPTION		
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				NO.	
-375.1					Continued from previous page										
-378.6	377.5												POORLY GRADED SAND with silt (SP-SM), gray (5Y6/1), very dense, wet, fine grained sand, few fines, weak HCl reaction (continued)		
		41	50/0.5							91/1.0	701(DH)-36				
-388.6	387.5														
		31	50/0.5							81/1.0	701(DH)-37				
-398.6	397.5														
		12	49	50/0.5						99/1.0	701(DH)-38		397.5ft: light gray (5Y7/1), fine to medium grained sand		
-408.6	407.5														
		32	42	40						82	701(DH)-39		407.5ft: gray (5Y6/1)		
-421.3	420.2														
		42	50/0.4							92/0.9	701(DH)-40				
-428.6	427.5														
		31	41	50/0.4						91/0.9	701(DH)-41				
-438.8	437.7														
		26	37	50						87	701(DH)-42		437.7ft: crossbedding/laminations, trace silt/clay lenses		
-448.6	447.5														
		17	12	25						82	701(DH)-43		447.5ft: greenish gray (10Y6/1), dense		

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 9/25/08

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade				GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)			
BORING NO.: B-701(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA			
GROUND ELEV.: -1.1 ft (NAVD88)				NORTHING: 396,976 US ft (NAD83/90)				EASTING: 875,792 US ft (NAD83/90)				24 HR. NA			
TOTAL DEPTH: 615.5 ft				BORING DIAMETER: 6" to 16.0', 4" to 615.5'				CASING DEPTH: 6" to 16.0', 4" to 457.5'				HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 4/3/08				COMPLETED: 5/5/08				CORE SIZE: PQ3/HQ3				BITS USED: 6 7/8" & 3 7/8" Tricone, 3 7/8" wingbit			
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	LOG	SOIL AND ROCK DESCRIPTION			
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					NO.
-524.7					Continued from previous page										
-526.6	525.5										RUN-36	-526.6	525.5	LIMESTONE, wackestone, white (5Y8/1), soft to medium hard, friable to moderately indurated, wet, strong HCl reaction, fossiliferous, shell molds and casts	
-531.6	530.5										RUN-37			530.5ft: pale yellow (5Y8/2), soft to moderately hard, friable to indurated	
-536.6	535.5										RUN-38			535.5ft: medium hard to moderately hard, moderately indurated to indurated	
-541.6	540.5										RUN-39			540.5ft: moderately hard, moderately indurated	
-546.6	545.5										RUN-40			545.5ft: trace dark phosphatic material, trace soft friable zone	
-551.6	550.5										RUN-41	-551.6	550.5	LIMESTONE, mudstone, light greenish gray (10Y8/1), moderately hard, moderately indurated, wet, strong HCl reaction, fossiliferous	
-556.6	555.5										RUN-42			555.5ft: medium hard	
-561.6	560.5										RUN-43				
-566.6	565.5										RUN-44			565.5ft: soft to medium hard	
-571.6	570.5										RUN-45			570.5ft: medium hard	
-576.6	575.5										RUN-46			575.5ft: pale yellow (5Y8/2), very soft to soft, friable to moderately indurated	
-581.6	580.5										RUN-47			580.5ft: light greenish gray (10Y7/1), to pale yellow (5Y8/2), very soft to medium hard	
-586.6	585.5										RUN-48			585.5ft: light gray (5Y7/2), medium hard, trace fine grained sand-sized dark material (possible phosphate)	
-591.6	590.5										RUN-49	-593.1	590.5	590.5ft: pale yellow (5Y7/3)	
-596.6	595.5										RUN-50	-594.1	593.0	LIMESTONE, wackestone, white (5Y8/1), hard, indurated, fossiliferous, mostly shell molds and casts	
												-597.1	596.0	LIMESTONE, mudstone, white (5Y8/1), soft to medium hard, friable to moderately indurated, moist, strong HCl reaction, fossiliferous	
												-598.1	597.0		

TURKEY POINT COL BORE 'TURKEY POINT.GPJ' TURKEY POINT COL.GDT 9/25/08

TURKEY POINT COL. BORE TURKEY POINT GPJ TURKEY POINT COL.GDT 9/25/08



SHEET 1 OF 9

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)	
BORING NO.: B-701(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.1 ft (NAVD88)				NORTHING: 396,976 US ft (NAD83/90)				EASTING: 875,792 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 615.5 ft				CASING DEPTH: 6" to 16.0', 4" to 457.5'						HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 4/3/08		COMPLETED: 5/5/08		CORE SIZE: PQ3/HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %RQD (ft) %		SAMP. NO.	STRATA REC. (ft) %RQD (ft) %		L O G	DESCRIPTION AND REMARKS			
										Begin Coring @ 16.0 ft			
-17.1	16.0	4.5	2:57 2:48 1:52 1:48 0.48/0.5	(3.6) 80%	(1.5) 33%	RUN-1	(4.3) 72%	(1.5) 25%			LIMESTONE, boundstone, pale yellow (5Y8/2), soft, friable, strong HCl reaction, wet, some sand, oolitic (Miami Formation) (continued)		
-21.6	20.5	5.0	2:58 1:48 1:51 3:04 2:28	(3.6) 72%	(2.7) 54%	RUN-2					-23.1	16.0ft: friable to indurated, trace locally interconnected vugs, recrystallized calcite	
							(24.5) 95%	(19.1) 74%				20.5 to 22.0ft: fragmented zone 22.0	
-26.6	25.5	5.0	3:04 3:05 5:12 4:48 4:12	(4.8) 96%	(4.3) 86%	RUN-3 701(DH)- CS-01						LIMESTONE, boundstone, white (5Y8/1), hard, indurated, wet, strong HCl reaction, few vugs, porous, fossiliferous, few shell molds and casts, recrystallized calcite (Upper Fort Thompson Formation)	
												24.5ft: loss of circulation	
-31.6	30.5	5.0	2:59 3:01 3:28 3:22 4:17	(4.9) 98%	(3.5) 70%	RUN-4						25.5ft: few to little vugs, mostly shell molds and casts	
												30.5ft: soft to hard, friable to indurated, coralline	
-36.6	35.5	5.0	3:05 3:01 2:32 1:53 3:01	(4.6) 92%	(3.0) 60%	RUN-5						35.5ft: hard, indurated	
												40.5ft: soft to hard, friable to indurated, few vugs	
-41.6	40.5	5.0	3:17 2:11 3:07 2:29 2:04	(5.0) 100%	(4.6) 92%	RUN-6 701(DH)- CS-02						45.5ft: gray (5Y6/1), hard, indurated to 47.8ft 47.8	
							(58.3) 87%	(43.2) 65%			-48.9	LIMESTONE, boundstone, white (5Y8/1), to very pale brown (10YR8/3), hard, indurated, fossiliferous, little gastropod shell molds and cast, few vugs, strong HCl reaction (Lower Fort Thompson Formation)	
-51.6	50.5	5.0	2:30 3:23 2:22 2:23 2:33	(4.8) 96%	(4.2) 84%	RUN-8 701(DH)- CS-03						50.5ft: white (5Y8/1)	
												55.5ft: trace to little sand	
-56.6	55.5	5.0	2:29 2:55 3:01 3:33 3:28	(5.0) 100%	(5.0) 100%	RUN-9							
												65.5ft: very soft to hard, friable to indurated	
-61.6	60.5	5.0	2:35 2:30 2:07 1:25 0:35	(4.7) 94%	(4.5) 90%	RUN-10 701(DH)- CS-04 701(DH)- CS-05						70.5ft: hard, indurated	
-66.6	65.5	5.0	1:49 4:41 4:34 3:04 5:23	(2.6) 52%	(1.0) 20%	RUN-11						83.5 to 84.5ft: soft, friable zone	
-71.6	70.5	5.0	2:15 2:54 3:21 2:54 2:58	(5.0) 100%	(4.9) 98%	RUN-12							
-76.6	75.5	5.0	2:34 2:13 1:45 0:54 0:35	(5.0) 100%	(4.4) 88%	RUN-13 701(DH)- CS-06							
-81.6	80.5	5.0	1:41 1:33 1:28 1:51 1:35	(4.0) 80%	(1.7) 34%	RUN-14							
-86.6	85.5	5.0	2:31 2:22 2:51 2:48 2:55	(4.8) 96%	(4.1) 82%	RUN-15							
-91.6	90.5	5.0											

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 9/25/08



SHEET 2 OF 9

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbray/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-701(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 396,976 US ft (NAD83/90)	EASTING: 875,792 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 615.5 ft	CASING DEPTH: 6" to 16.0', 4" to 457.5'	HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 4/3/08	COMPLETED: 5/5/08	CORE SIZE: PQ3/HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
Continued from previous page										
-96.6	95.5	5.0	0.49 0.55 0.47 0.36 0.35	(3.6) 72%	(1.6) 32%	RUN-16				90.5ft: soft to hard, friable to indurated, sandy Limestone, boundstone, white (5Y8/1), to very pale brown (10YR8/3), hard, indurated, fossiliferous, little gastropod shell molds and cast, few vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-101.6	100.5	5.0	0.41 0.22 0.05 0.33 0.41	(3.4) 68%	(1.4) 28%	RUN-17				95.5ft: moderately hard, moderately indurated 96.0 to 98.5ft: soft, friable, sandy zone
-106.6	105.5	5.0	0.35 1:14 0.52 0.41 1:10	(5.0) 100%	(3.3) 66%	RUN-18				100.5ft: hard, indurated, few to little vugs
-111.6	110.5	5.0	1:35 1:01 1:12 2:00 2:35	(5.0) 100%	(3.7) 74%	RUN-19				105.5ft: very soft to hard, friable to indurated
-116.6	115.5	5.0	1:01 1:05 1:03 0:59 0:22	(3.7) 74%	(1.1) 22%	RUN-20				110.5ft: hard, indurated, some sand
			N=9			701(DH)-8	(0.7) 70%	(NA) 0%		115.5ft: Switched sampling method to SPT Silty SAND (SM), white (5Y8/1), loose, wet, strong HCl reaction, trace shell fragments, fine to coarse grained sand, few fine gravel-sized cemented sand fragments (Tamiami Formation)
			N=10			701(DH)-9				122.7ft: mostly fine grained sand
			N=10			701(DH)-10				127.5ft: light olive gray (5Y6/2), trace gravel-sized cemented sand fragments
			N=11			701(DH)-11				137.5ft: gray (5Y6/1), medium dense
			N=14			701(DH)-12				147.5ft: olive gray (5Y5/2)
			N=13			701(DH)-13				157.5ft: light olive gray (5Y6/2)

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 9 25 08



SHEET 3 OF 9

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-701(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 396,976 US ft (NAD83/90)	EASTING: 875,792 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 615.5 ft	CASING DEPTH: 6" to 16.0', 4" to 457.5'	HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 4/3/08	COMPLETED: 5/5/08	CORE SIZE: PQ3/HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	RQD (ft) %	SAMP. NO.	REC. (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS
										Continued from previous page
			N=15			701(DH)-14				115.5ft: Switched sampling method to SPT Silty SAND (SM), white (5Y8/1), loose, wet, strong HCl reaction, trace shell fragments, fine to coarse grained sand, few fine gravel-sized cemented sand fragments (Tamiami Formation) (continued) 167.5ft: no recovery
			N=12			701(DH)-15				-173.6 Sandy SILT (ML), olive gray (5Y5/2), stiff, moist, mostly fine grained sand 172.5
			N=9			701(DH)-16				
			N=13			701(DH)-17				
			N=9			701(DH)-18				gray (5Y6/1), stiff, wet, strong HCl reaction, fine grained sand, trace gravel-sized cemented sand fragments
			N=7			701(DH)-19				-206.1 Silty SAND (SM), gray (5Y6/1), loose, wet, fine to medium grained sand, little fines, strong HCl reaction 205.0
			N=28			701(DH)-20				217.5ft: olive (5Y5/3), medium dense, some fines
			N=34			701(DH)-21				-223.6 Silty SAND (SM), olive gray (5Y5/2), dense, wet, strong HCl reaction, fine grained sand, little silt (Hawthorn Group) 222.5
			N=35			701(DH)-22				

TURKEY POINT COL CORE TURKEY POINT COL GDT 9/25/08



SHEET 4 OF 9

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-701(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 396,976 US ft (NAD83/90)	EASTING: 875,792 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 615.5 ft	CASING DEPTH: 6" to 16.0', 4" to 457.5'	HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 4/3/08	COMPLETED: 5/5/08	CORE SIZE: PQ3/HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
										Silty SAND (SM), olive gray (5Y5/2), dense, wet, strong HCl reaction, fine grained sand, little silt (Hawthorn Group) (continued)
			N=25			701(DH)-23				247.5ft: gray (5Y5/1) medium dense
			N=33			701(DH)-24				257.5ft: greenish gray (10Y6/1), dense
			N=33			701(DH)-25				
			N=34			701(DH)-26				277.5ft: dark greenish gray (10Y4/1)
			N=30			701(DH)-27				287.5ft: medium dense
			N=40			701(DH)-28				297.5ft: olive gray (5Y5/2), dense, fine to medium grained sand
			N=33			701(DH)-29				307.5ft: olive (5Y5/3)

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL.GDT 9 25.08



SHEET 5 OF 9

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-701(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 396,976 US ft (NAD83/90)	EASTING: 875,792 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 615.5 ft	CASING DEPTH: 6" to 16.0', 4" to 457.5'	HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 4/3/08	COMPLETED: 5/5/08	CORE SIZE: PQ3/HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	RQD (ft) %	SAMP. NO.	REC (ft) %	RQD (ft) %	LOG	DESCRIPTION AND REMARKS
										Continued from previous page
			N=66/0.9			701(DH)-30				Silty SAND (SM), olive gray (5Y5/2), dense, wet, strong HCl reaction, fine grained sand, little silt (Hawthorn Group) (continued) 317.5ft: light gray (5Y7/2), very dense, weak HCl reaction
			N=91/0.9			701(DH)-31				327.5ft: light gray (5Y7/1)
			N=92/0.9			701(DH)-32				337.6ft: gray (5Y6/1)
			N=90/0.9			701(DH)-33				POORLY GRADED SAND with silt (SP-SM), gray (5Y6/1), very dense, wet, fine grained sand, few fines, weak HCl reaction
			N=100/0.9			701(DH)-34				357.5ft: light olive gray (5Y6/2)
			N=88/0.8			701(DH)-35				367.5ft: gray (5Y6/1)
			N=91/1.0			701(DH)-36				
			N=81/1.0			701(DH)-37				

TURKEY POINT COL CORE TURKEY POINT COL.GPJ TURKEY POINT COL.GDT 9.25.08



SHEET 6 OF 9

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-701(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 396,976 US ft (NAD83/90)	EASTING: 875,792 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 615.5 ft	CASING DEPTH: 6" to 16.0', 4" to 457.5'	HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 4/3/08	COMPLETED: 5/5/08	CORE SIZE: PQ3/HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	RQD (ft) %	SAMP. NO.	REC. (ft) %	RQD (ft) %	STRATA (ft) %	L O G	DESCRIPTION AND REMARKS
											Continued from previous page
											POORLY GRADED SAND with silt (SP-SM), gray (5Y6/1), very dense, wet, fine grained sand, few fines, weak HCl reaction (continued)
			N=99/1.0			701(DH)-36					397.5ft: light gray (5Y7/1), fine to medium grained sand
			N=82			701(DH)-39					407.5ft: gray (5Y6/1)
			N=92/0.9			701(DH)-40					
			N=91/0.9			701(DH)-41					
			N=87			701(DH)-42					437.7ft: crossbedding/laminations, trace silt/clay lenses
			N=37			701(DH)-43					447.5ft: greenish gray (10Y6/1), dense
							(1.7) 100%	(0.3) 18%			-456.1 DOLOSTONE, grainstone, gray (5Y6/1), hard, indurated, wet, weak HCl reaction (Hawthorn Group) -455.0
-458.7	457.6	2.9	N=50/0.1 1.48/0.9 2.22 2.34	(1.7) 59%	(0.3) 10%	701(DH)-44 RUN-21					457.6ft: Switched sampling method to coring
-461.6	460.5	4.1	1.30 1.39 1.52 9.15	(2.4) 59%	(1.2) 29%	RUN-22	(1.1) 27%	(NA) 0%			light greenish gray (10Y7/1), few gastropod shell molds and casts, sugary texture, slight organic odor
-465.7	464.6						(7.5)	(6.1)			Silty SAND (SM), light greenish gray (10YR7/1), wet, fine grained sand, weak HCl reaction, little shell hash -464.5 -463.4

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 9 25 08



SHEET 7 OF 9

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-701(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.1 ft (NAVD88)	NORTHING: 396,976 US ft (NAD83/90)	EASTING: 875,792 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 615.5 ft	CASING DEPTH: 6" to 16.0', 4" to 457.5'	HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 4/3/08	COMPLETED: 5/5/08	CORE SIZE: PQ3/HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	RQD (ft) %	SAMP. NO.	STRATA REC (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS
Continued from previous page										
-466.6	465.5	0.9	4:57/0.1	(0.3)	(0.0)	RUN-23	93%	75%		464.6ft: green gray (10Y6/1), hard, indurated, fossiliferous
		5.0	2:50/0.9	33%	0%	RUN-24				DOLOSTONE, wackestone, light greenish gray (10Y7/1), soft, friable to moderately indurated, wet, weak HCl reaction (continued)
			1:54	(5.0)	(4.5)					465.5ft: pale olive (5Y6/3), soft, friable to moderately indurated,
			1:18	100%	90%					
-471.6	470.5	5.0	1:09							
			1:20	(0.9)	(0.4)	RUN-25				470.5ft: greenish gray (5Y6/1), hard, indurated
			2:28	18%	8%		(0.0)	(NA)		Silty SAND (SM), no recovery-cuttings observed in drill fluid return, dark in color
			4:27				0%	0%		
			1:21							
-476.6	475.5	5.0	2:49							
			4:58	(4.2)	(2.0)	RUN-26				477.6
			1:47	84%	40%		(9.2)	(5.0)		LIMESTONE, packstone, pale yellow (5Y8/2), soft to hard, friable to indurated,
			WOR				92%	50%		wet, strong HCl reaction, fossiliferous, mostly shell molds and casts, few vugs
			2:12							
-481.6	480.5	5.0	3:07	(4.0)	(2.6)	RUN-27				480.5ft: soft to very soft, friable
			4:08	80%	52%					
			1:53							
			2:18							
-486.6	485.5	5.0	4:04	(3.8)	(1.6)	RUN-28				485.5ft: hard, indurated
			4:24	76%	32%		(12.8)	(8.3)		LIMESTONE, wackestone, pale yellow (5Y8/2), soft, friable to moderately
			3:38				91%	59%		indurated, wet, strong HCl reaction, fossiliferous
			3:27							
-491.6	490.5	5.0	1:14	(5.0)	(4.8)	RUN-29				490.5ft: medium hard to very soft, moderately indurated to friable
			1:58	100%	96%					
			4:48							
			3:23							
-496.6	495.5	5.0	5:11	(4.7)	(2.3)	RUN-30				495.5ft: soft to hard, friable to moderately indurated
			3:44	94%	46%					
			3:14							
			2:52							
-501.6	500.5	5.0	2:58	(3.8)	(1.8)	RUN-31	(1.1)	(NA)		503.6
			4:20	76%	36%		55%	0%		Silty SAND (SM), gray (5Y5/1), wet, strong HCl reaction, trace mica, some
							(20.8)	(14.2)		limestone fragments (Interpreted as medium dense to dense based on drill rate
-506.6	505.5	5.0	1:35	(5.0)	(5.0)	RUN-32	90%	62%		and recovery)
			1:35	100%	100%					LIMESTONE, packstone, pale yellow (5Y8/2), wet, soft, friable, fossiliferous,
			2:32							mostly shell molds and casts
-511.6	510.5	5.0	3:11	(5.0)	(3.6)	RUN-33				505.5ft: soft to medium hard, friable to moderately indurated, fossil-rich mud
			4:04	100%	72%					zones
			1:39							
-516.6	515.5	5.0	3:38	(5.0)	(3.6)	RUN-34				510.5ft: medium hard, moderately indurated, and soft, friable zones
			2:58	100%						
			1:41							
			1:35							
-521.6	520.5	5.0	0:29	(3.5)	(1.9)	RUN-35				515.5ft: hard, indurated
			0:37	70%	38%					
			1:25							
-526.6	525.5	5.0	1:19	(4.6)	(1.9)	RUN-36				520.5ft: medium hard to moderately hard, moderately indurated to indurated,
			3:17	92%	38%					524.5 to 525.5ft: soft zone
			1:43							
			1:01							
-531.6	530.5	5.0	1:48	(3.4)	(2.8)	RUN-37	(19.8)	(11.0)		526.6
			2:03	68%	56%		79%	44%		LIMESTONE, wackestone, white (5Y8/1), soft to medium hard, friable to
			1:45							moderately indurated, wet, strong HCl reaction, fossiliferous, shell molds and
										casts
-536.6	535.5	5.0	4:06	(3.7)	(1.3)	RUN-38				530.5ft: pale yellow (5Y8/2), soft to moderately hard, friable to indurated
			1:31	74%	26%					
			2:01							
			1:40							
			1:41							
			4:47	(4.1)	(3.0)	RUN-38				535.5ft: medium hard to moderately hard, moderately indurated to indurated
			1:16	82%	60%					
			3:03							
			5:40							
			2:35							

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 9:25:08



SHEET 8 OF 9

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)	
BORING NO.: B-701(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.1 ft (NAVD88)				NORTHING: 396,976 US ft (NAD83/90)				EASTING: 875,792 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 615.5 ft				CASING DEPTH: 6" to 16.0', 4" to 457.5'						HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 4/3/08		COMPLETED: 5/5/08		CORE SIZE: PQ3/HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
Continued from previous page													
-541.6	540.5	5.0	3:21 1:24 1:13 0:48 1:05 1:00	(4.9) 98%	(2.3) 46%	RUN-39							LIMESTONE, wackestone, white (5Y8/1), soft to medium hard, friable to moderately indurated, wet, strong HCl reaction, fossiliferous, shell molds and casts (continued) 540.5ft: moderately hard, moderately indurated
-546.6	545.5	5.0	0:37 0:34 2:00 2:35 5:04	(3.7) 74%	(1.6) 32%	RUN-40							545.5ft: trace dark phosphatic material, trace soft friable zone
-551.6	550.5	5.0	2:07 2:11 2:14 2:14 3:24	(5.0) 100%	(4.1) 82%	RUN-41	(38.3) 92%	(31.2) 75%					LIMESTONE, mudstone, light greenish gray (10Y8/1), moderately hard, moderately indurated, wet, strong HCl reaction, fossiliferous
-556.6	555.5	5.0	2:10 0:52 1:18 1:08 1:49	(4.4) 88%	(3.8) 76%	RUN-42							555.5ft: medium hard
-561.6	560.5	5.0	1:09 1:09 0:58 1:00 0:58	(4.3) 86%	(1.3) 26%	RUN-43							
-566.6	565.5	5.0	0:16 0:22 0:39 1:34 1:12	(3.2) 64%	(2.9) 58%	RUN-44							565.5ft: soft to medium hard
-571.6	570.5	5.0	1:22 1:32 1:49 0:25 1:23	(5.0) 100%	(3.7) 74%	RUN-45							570.5ft: medium hard
-576.6	575.5	5.0	1:28 0:54 0:28 1:28 2:36	(5.0) 100%	(5.0) 100%	RUN-46							575.5ft: pale yellow (5Y8/2), very soft to soft, friable to moderately indurated
-581.6	580.5	5.0	1:22 0:59 1:06 2:33 4:03	(5.0) 100%	(4.0) 80%	RUN-47							580.5ft: light greenish gray (10Y7/1), to pale yellow (5Y8/2), very soft to medium hard
-586.6	585.5	5.0	2:04 2:54 2:37 2:04 1:42	(4.9) 98%	(4.9) 98%	RUN-48							585.5ft: light gray (5Y7/2), medium hard, trace fine grained sand-sized dark material (possible phosphate)
-591.6	590.5	5.0	0:58 2:22 2:24 3:20 2:20	(4.7) 94%	(4.1) 82%	RUN-49							590.5ft: pale yellow (5Y7/3)
-596.6	595.5	5.0	1:22 2:20 2:40 1:26 2:23	(3.0) 60%	(1.0) 20%	RUN-50	(1.0) 100%	(0.4) 40%					LIMESTONE, wackestone, white (5Y8/1), hard, indurated, fossiliferous, mostly shell molds and casts
-601.6	600.5	5.0	2:21 3:54 4:07 4:26 2:39	(5.0) 100%	(4.7) 94%	RUN-51	(1.0) 100%	(0.0) 0%					LIMESTONE, mudstone, white (5Y8/1), soft to medium hard, friable to moderately indurated, moist, strong HCl reaction, fossiliferous
-606.6	605.5	5.0	3:40 3:27 3:31 3:24 2:21	(3.2) 64%	(3.2) 64%	RUN-52	(14.9) 81%	(13.7) 74%					LIMESTONE, wackestone, white (5Y8/1), hard, indurated, moist, fossiliferous, mostly shell fragments, strong HCl reaction
-611.6	610.5	2.0	1:05 1:04	(2.0) 100%	(1.6) 80%	RUN-53							LIMESTONE, mudstone, pale yellow (5Y8/2), soft, friable, wet, strong HCl reaction, fossiliferous, trace fine grained sand
-613.6	612.5	3.0	2:21 5:13	(3.0) (3.0)		RUN-54							600.5ft: light gray (5Y7/3), medium hard, moderately indurated
													605.5ft: pale yellow (5Y8/2)

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 9-25-08

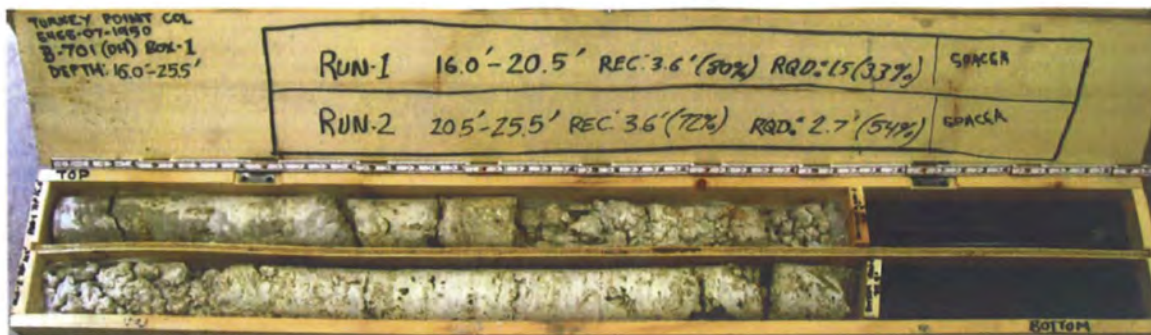


SHEET 9 OF 9

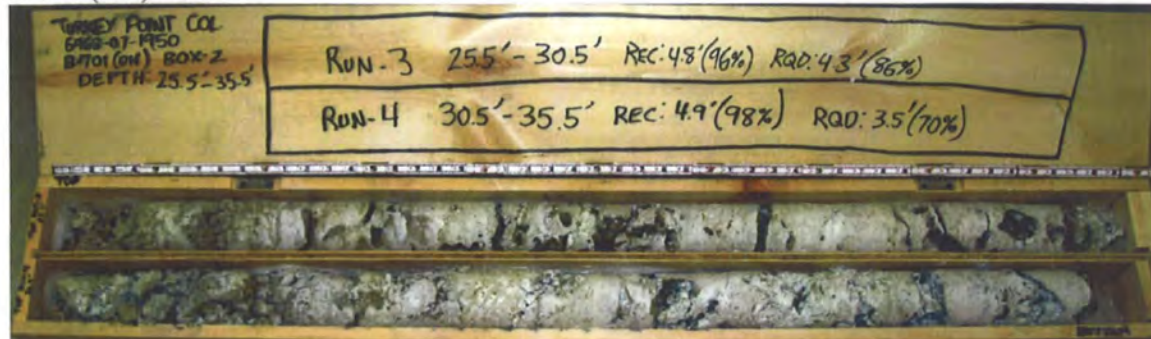
BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark	
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker		GROUND WATER (ft) 0 HR. NA 24 HR. NA	
BORING NO.: B-701(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core			
GROUND ELEV.: -1.1 ft (NAVD88)				NORTHING: 396,976 US ft (NAD83/90)				EASTING: 875,792 US ft (NAD83/90)			
TOTAL DEPTH: 615.5 ft				CASING DEPTH: 6" to 16.0', 4" to 457.5'						HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 4/3/08		COMPLETED: 5/5/08		CORE SIZE: PQ3/HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)					

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
-616.6	615.5		4.04	100%	100%					Continued from previous page
										Coring Terminated at Elevation -616.6

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 9/25/08



B-701 (DH) – Box 1



B-701 (DH) – Box 2



B-701 (DH) – Box 3



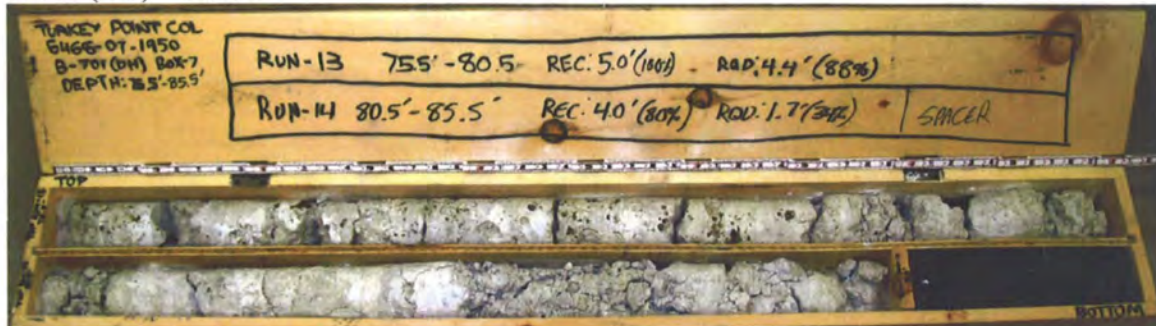
B-701 (DH) – Box 4



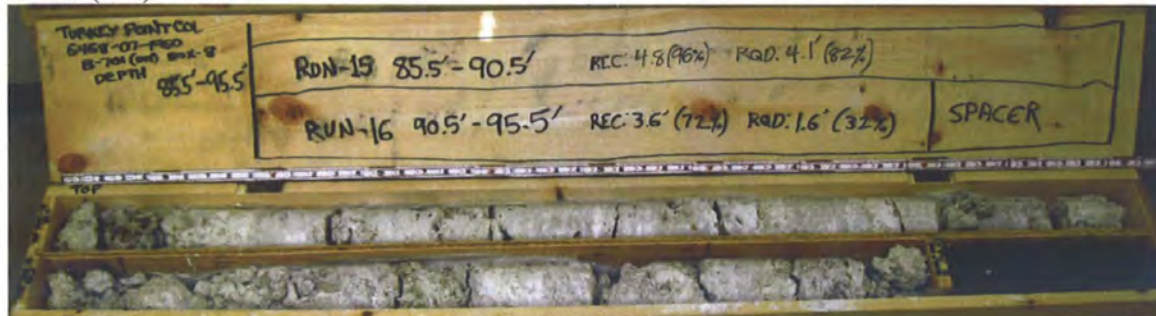
B-701 (DH) – Box 5



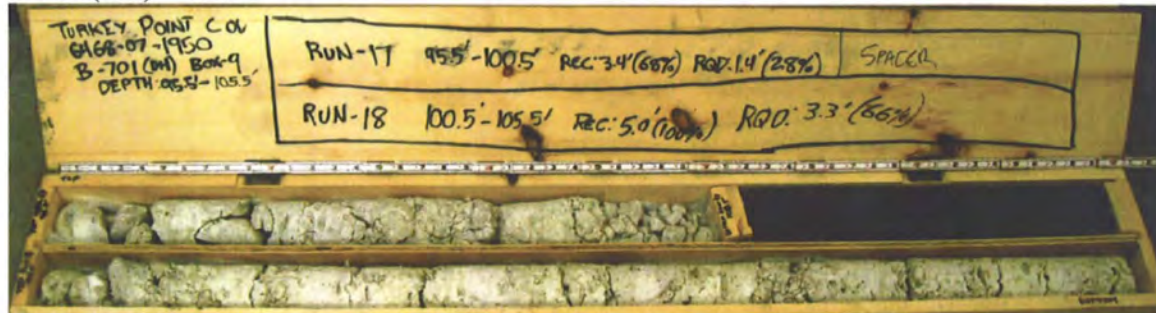
B-701 (DH) – Box 6



B-701 (DH) – Box 7



B-701 (DH) – Box 8



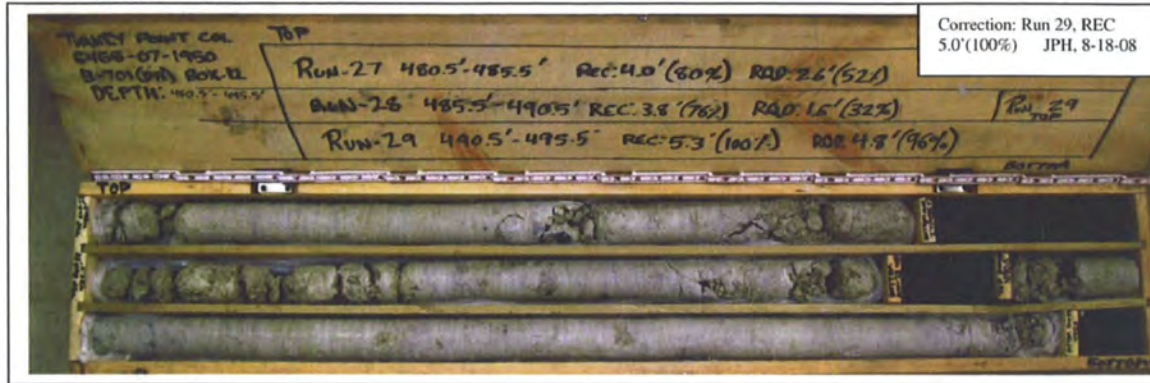
B-701 (DH) – Box 9



B-701 (DH) – Box 10



B-701 (DH) – Box 11



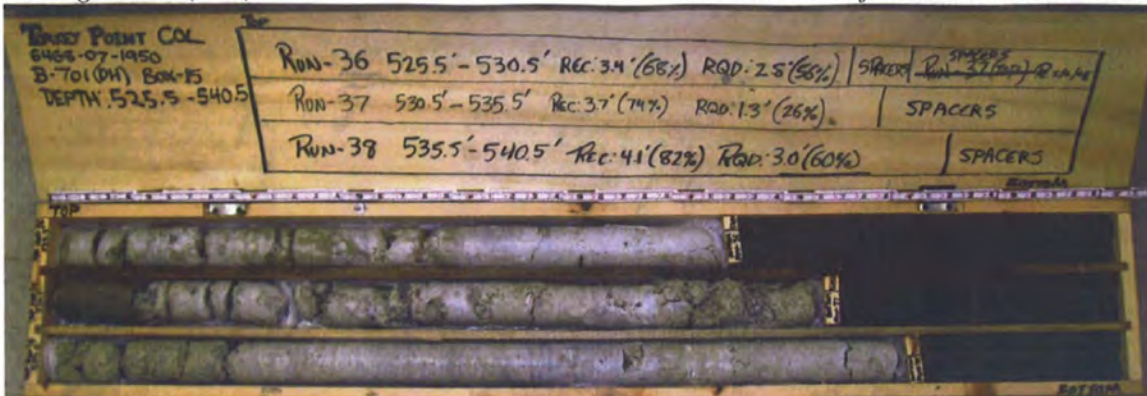
B-701 (DH) – Box 12



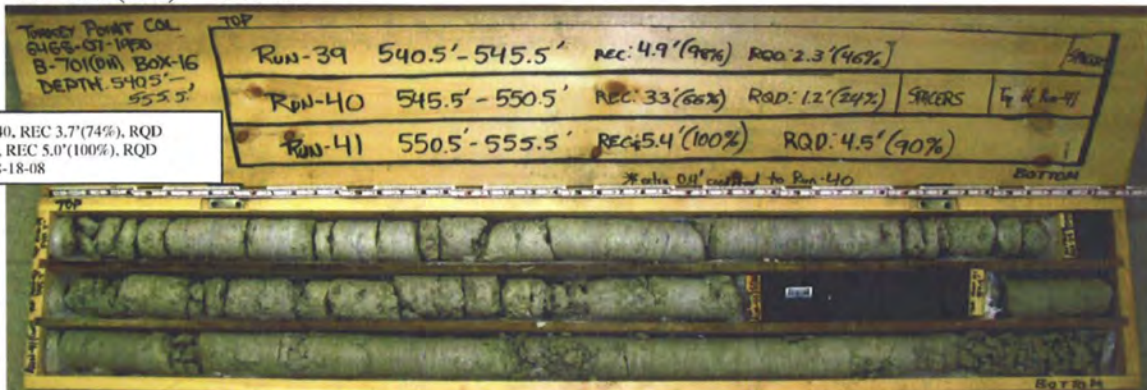
B-701 (DH) – Box 13



B-701 (DH) – Box 14



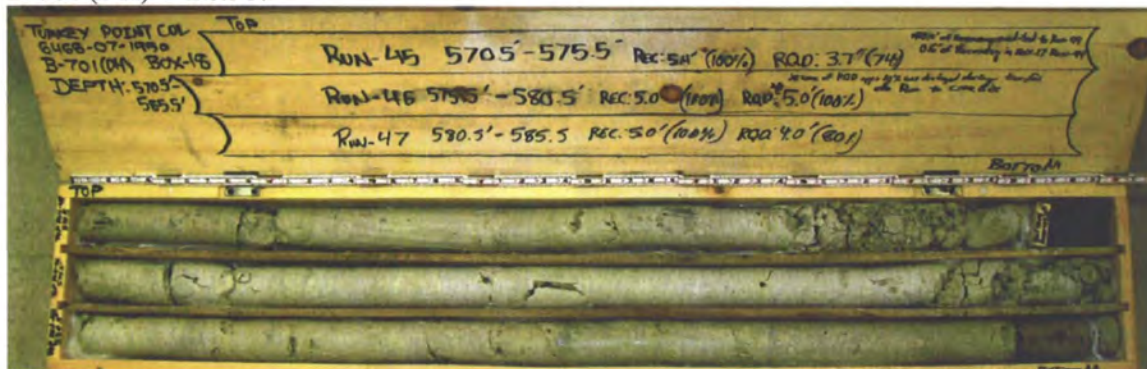
B-B-701 (DH) - Box 15



B-701 (DH) - Box 16



B-701 (DH) - Box 17



B-701 (DH) - Box 18



B-701 (DH) – Box 19



Corrections: Run 53, REC 2.0' (100%), RQD 1.6' (80%)
Run 54, REC 3.0' (100%), RQD 3.0' (100%) JPH, 8-18-08

B-701 (DH) – Box 20



GEOTECHNICAL BORING LOG

Prepared By SPZ Date 5-30-08Checked By MM Date 5-30-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: J. Liles							
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550 (Miller)		DRILLER: R. White/ J. Dugger/ C. White		GROUND WATER (ft)							
BORING NO.: B-702		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA							
GROUND ELEV.: -1.2 ft (NAVD88)		NORTHING: 397,018 US ft (NAD83/90)		EASTING: 875,746 US ft (NAD83/90)		24 HR. NA							
TOTAL DEPTH: 202.5 ft		BORING DIAMETER: 4" to 25.0', 3" to 202.5'		CASING DEPTH: 4" to 25.0', 3" to 122.9'		HAMMER (ID): 140 lb. Auto (M06)							
DATE STARTED: 2/26/08		COMPLETED: 3/6/08		CORE SIZE: HQ3		BITS USED: 2 7/8" Roller Cone							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-1.2					Ground Surface							-1.2	0.0
-1.2	0.0	WOH	WOH	WOH							702-1		MUCK, very dark grayish brown (10YR3/2), very soft, wet, strong HCl reaction, fibrous
-3.8	2.6										702-2A&B		
-6.3	5.1	WOH	WOH	2							702-3		Clayey SAND (SC), light brownish gray (2.5Y2), very loose, wet, fine to medium grained sand, strong HCl reaction, organics, little limestone fragments
-8.6	7.4	4	5	3							702-4		LIMESTONE, boundstone, pale yellow (2.5Y8/2), very soft, wet, strong HCl reaction, trace sand, fossiliferous, oolitic (Miami Formation)
-10.6	9.4	34	21	5							702-5		7.4ft: soft
-13.5	12.3	2	5	5							702-6		9.4ft: white (2.5Y8/1), very soft
-15.9	14.7	2	33	20							702-7		12.3ft: moderately hard
		2	14	12									14.7ft: soft, trace clay
-22.2	21.0												
		1	1	3							702-8		21.0ft: very soft
-27.2	26.0												
		2	10	18							702-9		LIMESTONE, boundstone, white (2.5Y8/1), soft, wet, strong HCl reaction, trace sand (Upper Fort Thompson Formation)
-32.2	31.0												
		5	10	11							702-10		POORLY GRADED SAND with silt (SP-SM), light gray (5Y7/2), medium dense, wet, fine to coarse grained sand, fine gravel, few fines, strong HCl reaction, transitions to limestone at 35.8ft
-36.0	34.8												
-37.1	35.9	6	13	50/0.1							702-11		Field notes do not indicate that 702-11 was split into separate jars
-40.1	38.9										RUN-1		35.9ft: Switch sample method to coring
											RUN-2		LIMESTONE, boundstone, white (2.5Y8/1), hard, extremely indurated, strong HCl reaction, coralline, few vugs
-45.1	43.9												38.9ft: trace shell fragments, fossiliferous
											RUN-3		42.0ft: loss of circulation
													43.9ft: light gray (10YR7/1) to 47.4ft
-50.1	48.9												
											RUN-4		LIMESTONE, boundstone, white (2.5Y8/1), hard, extremely indurated, fossiliferous, some vugs, strong HCl reaction (Lower Fort Thompson Formation)
-55.1	53.9												
											RUN-5		53.9ft: medium hard to moderately hard, moderately indurated to indurated, trace vugs
-60.1	58.9												54.0 to 55.0ft: soft zone
											RUN-6		58.9ft: moderately hard, moderately indurated, little vugs
-65.1	63.9												
											RUN-7		63.9ft: light gray (5Y7/1), hard, indurated, few vugs
-70.1	68.9												65.0 to 69.0ft: soft zone
											RUN-8		
-75.1	73.9										702-CS-01		68.9ft: white (2.5Y8/1), moderately hard, some vugs
											702-CS-02		
											RUN-9		

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL.GDT 5/30/08

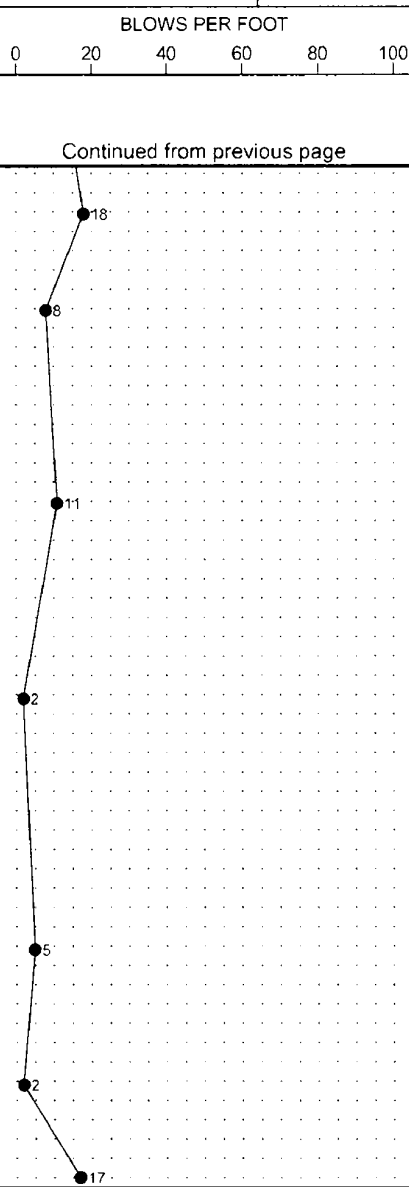


SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: J. Liles					
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550 (Miller)					DRILLER: R. White/ J. Dugger/ C. White					GROUND WATER (ft)			
BORING NO.: B-702					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR.		NA	
GROUND ELEV.: -1.2 ft (NAVD88)					NORTHING: 397,018 US ft (NAD83/90)					EASTING: 875,746 US ft (NAD83/90)					24 HR.		NA	
TOTAL DEPTH: 202.5 ft			BORING DIAMETER: 4" to 25.0', 3" to 202.5'					CASING DEPTH: 4" to 25.0', 3" to 122.9'					HAMMER (ID):140 lb. Auto (M06)					
DATE STARTED: 2/26/08			COMPLETED: 3/6/08			CORE SIZE: HQ3			BITS USED: 2 7/8" Roller Cone									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION				
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100								
-76.0					Continued from previous page													
-80.1	78.9										RUN-10		73.9ft: hard, few vugs LIMESTONE, boundstone, white (2.5Y8/1), hard, extremely indurated, fossiliferous, some vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued) 78.9ft: moderately hard, trace vugs					
-85.1	83.9										RUN-11		83.9ft: hard					
-90.1	88.9										702-CS-03 RUN-12		88.9ft: moderately hard, little vugs					
-95.1	93.9										RUN-13		93.9ft: moderately indurated					
-100.1	98.9										RUN-14		98.9ft: indurated, some vugs, little shell molds and casts					
-105.1	103.9										702-CS-04 RUN-15							
-110.1	108.9										RUN-16							
-115.1	113.9										RUN-17		113.9ft: white (5Y8/1), trace vugs, shell molds and casts					
-120.1	118.9										RUN-18		118.9ft: white (5Y8/1), trace vugs, shell molds and casts					
-120.4	119.2	1	2	1							702-12		119.2ft: Switch sampling method to SPT POORLY GRADED GRAVEL with silt and gravel (SP-SM), light gray (5Y7/1), wet, fine to coarse grained sand, fine to coarse limestone gravel fragments, strong HCl reaction (Tamiami Formation)					
-125.4	124.2										702-13		119.2ft: loose, trace shells, limestone fragments, trace silt					
-132.3	131.1										702-14		124.2ft: POORLY GRADED SAND with silt (SP-SM), light gray (5Y7/1), very loose, wet, fine grained sand, few fines, trace limestone fragments, strong HCl reaction					
-137.3	136.1										702-15		131.1ft: Silty SAND (SM), greenish gray (10YR6/1), loose, wet, fine grained sand, few fines, strong HCl reaction					
-142.2	141.0										702-16		136.1ft: medium dense, few limestone fragments, trace shell fragments					
-147.2	146.0										702-17							

TURKEY POINT COL BORE TURKEY POINT COL.GDT 5.30/08



BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade		GEOLOGIST: J. Liles				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550 (Miller)					DRILLER: R. White/ J. Dugger/ C. White				GROUND WATER (ft)		
BORING NO.: B-702					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core				0 HR. NA		
GROUND ELEV.: -1.2 ft (NAVD88)					NORTHING: 397,018 US ft (NAD83/90)					EASTING: 875,746 US ft (NAD83/90)				24 HR. NA		
TOTAL DEPTH: 202.5 ft			BORING DIAMETER: 4" to 25.0', 3" to 202.5'					CASING DEPTH: 4" to 25.0', 3" to 122.9'				HAMMER (ID): 140 lb. Auto (M06)				
DATE STARTED: 2/26/08			COMPLETED: 3/6/08			CORE SIZE: HQ3			BITS USED: 2 7/8" Roller Cone							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100						
-150.8					Continued from previous page											
-152.3	151.1	4	7	11							702-18			Silty SAND (SM), greenish gray (10YR6/1), loose, wet, fine grained sand, few fines, strong HCl reaction (continued) 151.1ft: greenish gray (10Y5/1), little fines		
-157.3	156.1	3	3	5							702-19			156.1ft: loose		
-167.3	166.1	2	4	7							702-20			166.1ft: medium dense		
-177.4	176.2	1	1	1							702-21			-177.4	176.2	SILT with sand (ML), greenish gray (10Y5/1), very loose, wet, fine to medium grained sand, strong HCl reaction
-190.4	189.2	1	1	4							702-22			-192.2	189.2ft: loose, trace clay	191.0
-197.4	196.2	1	1	1							702-23			-197.4	196.2	Clayey SAND (SC), greenish gray (10Y5/1), very loose, wet, fine grained sand, some fines, strong HCl reaction
-202.2	201.0	5	7	10							702-24			-201.2	200.0	SILT with sand (ML), greenish gray (10Y5/1), very loose, wet, fine grained sand, strong HCl reaction
														-203.7	202.5	LEAN CLAY with sand (CL), greenish gray (10Y5/1), very stiff, wet, little fine grained sand, strong HCl reaction Boring Terminated at Elevation -203.7 ft



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: J. Liles		
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (Miller)				DRILLER: R. White/ J. Dugger/ C. White			GROUND WATER (ft) 0 HR. NA 24 HR. NA	
BORING NO.: B-702				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				
GROUND ELEV.: -1.2 ft (NAVD88)				NORTHING: 397,018 US ft (NAD83/90)				EASTING: 875,746 US ft (NAD83/90)				
TOTAL DEPTH: 202.5 ft				CASING DEPTH: 4" to 25.0', 3" to 122.9'						HAMMER (ID): 140 lb. Auto (M06)		
DATE STARTED: 2/26/08		COMPLETED: 3/6/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)						
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS
												Begin Coring @ 35.9 ft
-37.1	35.9	3.0	2:18	(3.0)	(2.8)	RUN-1	(11.5)	(10.1)				LIMESTONE, boundstone, white (2.5Y8/1), hard, extremely indurated, strong HCl reaction, coralline, few vugs (continued)
-40.1	38.9		2:29	100%	93%		100%	88%				
		5.0	2:12	(5.0)	(4.2)	RUN-2						38.9ft: trace shell fragments, fossiliferous
			2:25	100%	84%							
			2:03									
			1:51									42.0ft: loss of circulation
-45.1	43.9		2:22									
		5.0	2:32	(4.3)	(3.5)	RUN-3						43.9ft: light gray (10YR7/1) to 47.4ft
			2:16	86%	70%							
			1:28									
			1:50									
-50.1	48.9		0:55				(53.4)	(37.7)				LIMESTONE, boundstone, white (2.5Y8/1), hard, extremely indurated, fossiliferous, some vugs, strong HCl reaction (Lower Fort Thompson Formation)
		5.0	1:49	(5.0)	(4.6)	RUN-4	79%	56%				
			1:35	100%	92%							
			1:29									
			1:36									
-55.1	53.9		2:05									
		5.0	0:00	(2.6)	(1.3)	RUN-5						53.9ft: medium hard to moderately hard, moderately indurated to indurated, trace vugs
			0:32	52%	26%							54.0 to 55.0ft: soft zone
			1:08									
-60.1	58.9		3:35									
		5.0	1:34									
			1:19	(5.0)	(3.5)	RUN-6						58.9ft: moderately hard, moderately indurated, little vugs
			1:00	100%	70%							
			1:20									
			1:07									
-65.1	63.9		1:44									
		5.0	2:10	(2.0)	(1.6)	RUN-7						63.9ft: light gray (5Y7/1), hard, indurated, few vugs
			1:20	40%	32%							65.0 to 69.0ft: soft zone
			0:25									
			0:20									
-70.1	68.9		0:30									
		5.0	1:07	(4.7)	(4.0)	RUN-8						68.9ft: white (2.5Y8/1), moderately hard, some vugs
			2:18	94%	80%	702-CS-01						
			3:08			702-CS-02						
			2:03									
-75.1	73.9		2:15									
		5.0	2:18	(4.2)	(3.5)	RUN-9						73.9ft: hard, few vugs
			1:44	84%	70%							
			2:18									
			1:23									
-80.1	78.9		1:00									
		5.0	0:57	(4.0)	(1.7)	RUN-10						78.9ft: moderately hard, trace vugs
			0:43	80%	34%							
			0:40									
			0:45									
-85.1	83.9		0:40									
		5.0	0:30	(4.5)	(3.3)	RUN-11						83.9ft: hard
			0:31	90%	66%							
			1:30									
			1:25			702-CS-03						
-90.1	88.9		1:38									
		5.0	0:51	(4.6)	(3.0)	RUN-12						88.9ft: moderately hard, little vugs
			0:55	92%	60%							
			1:04									
			0:48									
-95.1	93.9		0:39									
		5.0	0:33	(1.5)	(0.4)	RUN-13						93.9ft: moderately indurated
			0:12	30%	8%							
			0:13									
			0:14									
-100.1	98.9		0:47									
		5.0	0:23	(4.4)	(3.9)	RUN-14						98.9ft: indurated, some vugs, little shell molds and casts
			0:33	88%	78%							
			0:35			702-CS-04						
			0:28									
-105.1	103.9		0:38									
		5.0	0:23	(4.8)	(3.3)	RUN-15						
			0:28	96%	66%							
			0:19									
			0:28									
-110.1	108.9		0:22									
		5.0	0:18	(4.4)	(3.2)	RUN-16						
			0:18									

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



SHEET 2 OF 2

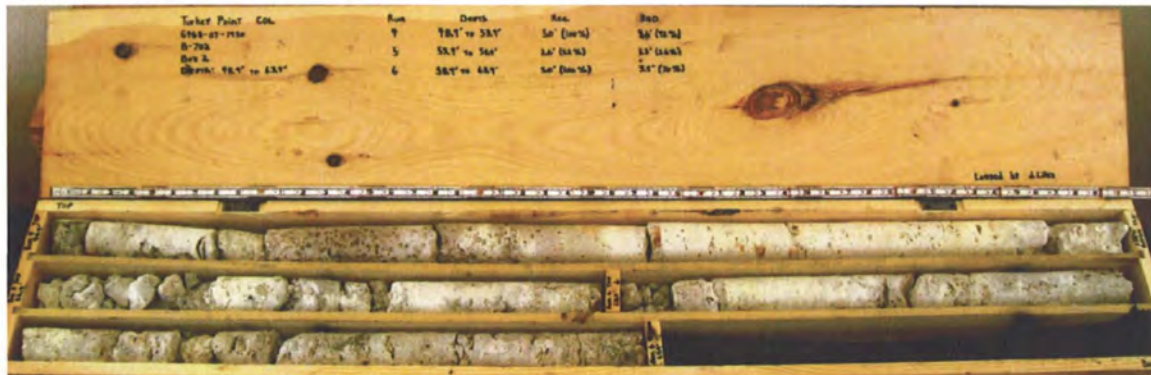
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: J. Liles
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger/ C. White	GROUND WATER (ft)
BORING NO.: B-702	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.2 ft (NAVD88)	NORTHING: 397,018 US ft (NAD83/90)	EASTING: 875,746 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 202.5 ft	CASING DEPTH: 4" to 25.0', 3" to 122.9'	HAMMER (ID): 140 lb. Auto (M06)	
DATE STARTED: 2/26/08	COMPLETED: 3/6/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-115.1	113.9		0:19 0:28 1:08	88%	64%					LIMESTONE, boundstone, white (2.5Y8/1), hard, extremely indurated, fossiliferous, some vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)
		5.0	1:00 0:23 0:39 0:16 0:12	(0.9) 18%	(0.0) 0%	RUN-17	(0.3) 7%	(NA)		113.9ft: white (5Y8/1), trace vugs, shell molds and casts
-120.1	118.9									POORLY GRADED GRAVEL with silt and gravel (SP-SM), light gray (5Y7/1), wet, fine to coarse grained sand, fine to coarse limestone gravel fragments, strong HCl reaction (Tamiami Formation)
-120.4	119.2	0.3	0:20/0.3	(0.3) 100%	(0.0) 0%	RUN-18				119.2
										Coring Terminated at Elevation -120.4

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



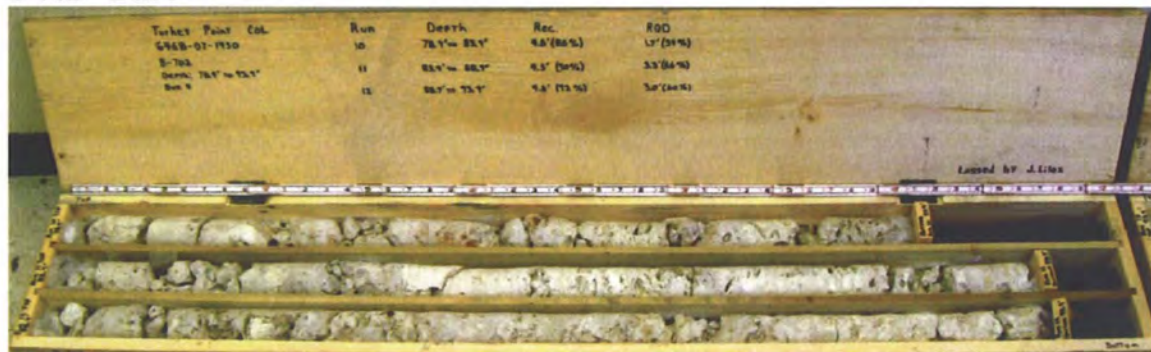
B-702 - Box 1



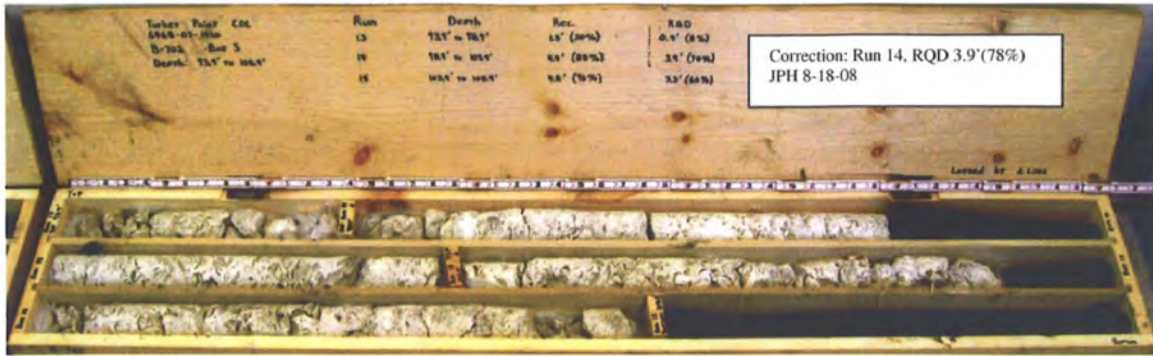
B-702 - Box 2



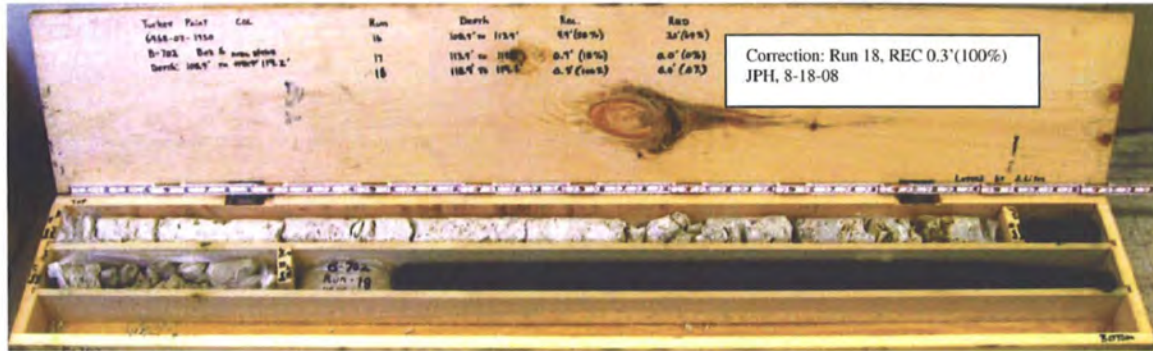
B-702 - Box 3



B-702 - Box 4



B-702 – Box 5



B-702 – Box 6



GEOTECHNICAL BORING LOG

Prepared By 2276 Date 8-19-08

Checked By 502 Date 8/19/08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: J. Liles				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550 (Miller)					DRILLER: R. White/ J. Dugger					GROUND WATER (ft)		
BORING NO.: B-703					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA		
GROUND ELEV.: -1.3 ft (NAVD88)					NORTHING: 397,018 US ft (NAD83/90)					EASTING: 875,846 US ft (NAD83/90)					24 HR. NA		
TOTAL DEPTH: 150.0 ft			BORING DIAMETER: 4" to 27.9', 3" to 150.0'					CASING DEPTH: 4" to 27.9', 3" to 115.0'					HAMMER (ID): 140 lb. Auto (M06)				
DATE STARTED: 2/22/08			COMPLETED: 2/25/08			CORE SIZE: HQ3			BITS USED: 2 7/8" Roller Cone								
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT					SAMP.	LOG	SOIL AND ROCK DESCRIPTION					
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			NO.				
-1.3					Ground Surface												
-1.3	0.0	WOH	WOH	WOH	0						703-1	-1.3	0.0				
-3.8	2.5										703-2A&B						
		WOH	6	17								-4.6	3.3				
-6.5	5.2										703-3						
		2	7	8													
-9.1	7.8										703-4						
		2	3	5													
-11.2	9.9										703-5						
		1	4	5													
-13.6	12.3										703-6						
		1	3	5													
-16.3	15.0																
-17.5	16.2	20	22	50/0.2							703-7						
											RUN-1						
-20.1	18.8																
											RUN-2						
-25.1	23.8										RUN-3						
												-26.3	25.0				
-30.1	28.8																
											RUN-4						
-34.1	32.8																
											RUN-5						
-39.1	37.8																
											RUN-6						
-44.1	42.8																
											RUN-7						
-49.1	47.8																
											RUN-8						
-54.1	52.8																
											RUN-9						
-59.1	57.8																
											RUN-10						
-64.1	62.8																
											RUN-11						
-69.1	67.8																
											RUN-12						
-74.1	72.8																
											RUN-13						

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GPJ 8-18-08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade				GEOLOGIST: J. Liles			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550 (Miller)				DRILLER: R. White/ J. Dugger				GROUND WATER (ft)			
BORING NO.: B-703				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA			
GROUND ELEV.: -1.3 ft (NAVD88)				NORTHING: 397,018 US ft (NAD83/90)				EASTING: 875,846 US ft (NAD83/90)				24 HR. NA			
TOTAL DEPTH: 150.0 ft				BORING DIAMETER: 4" to 27.9', 3" to 150.0'				CASING DEPTH: 4" to 27.9', 3" to 115.0'				HAMMER (ID):140 lb. Auto (M06)			
DATE STARTED: 2/22/08				COMPLETED: 2/25/08				CORE SIZE: HQ3				BITS USED: 2 7/8" Roller Cone			
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-76.1					Continued from previous page										
-79.1	77.8										RUN-14			LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, few vugs, fossiliferous, trace shell molds and casts (Lower Fort Thompson Formation) (continued)	
-84.1	82.8										RUN-15				
-89.1	87.8										RUN-16			87.8ft: moderately hard	
-94.1	92.8										RUN-17			92.8ft: little vugs, little shell molds and casts	
-99.1	97.8										RUN-18			97.8ft: hard	
-104.1	102.8										RUN-19			102.8ft: few shell molds and casts	
-109.1	107.8										RUN-20			107.8ft: POORLY GRADED SAND with silt (SP-SM), light gray (5Y7/1), loose, wet, fine grained sand, few carbonate nodules, strong HCl reaction (Tamiami Formation)	
-115.0	113.7										703-8			113.7ft: Switch sampling method to SPT	
-119.9	118.6	3	4	2							703-9			118.6ft: white (5Y8/1), very loose, fine to medium grained sand	
		WOH	WOH	WOH											
-125.1	123.8										703-10			123.8ft: Silty SAND (SM), light olive gray (5Y6/2), loose, wet, fine to medium grained sand, strong HCl reaction	
-129.9	128.6	3	3	3							703-11			127.0ft: POORLY GRADED SAND with silt (SP-SM), greenish gray (10Y5/1), medium dense, wet, fine grained sand, strong HCl reaction	
-134.8	133.5	2	4	7							703-12			133.5ft: Silty SAND (SM), greenish gray (10Y5/1), loose, wet, fine to coarse grained sand, fine gravel, trace shell fragments, strong HCl reaction	
-139.9	138.6	4	5	4							703-13			138.6ft: medium dense	
-144.8	143.5	5	10	10							703-14			143.5ft: Silty, Clayey SAND (SC-SM), greenish gray (10Y5/1), medium dense, wet, fine grained sand, strong HCl reaction	
-149.8	148.5	5	6	10							703-15				
		4	5	9											

TURKEY POINT COL BORE TURKEY POINT COL GDT 8/18/08

BECHTEL PROJECT NO.: 25409						MACTEC PROJECT NO.: 6468-07-1950						COUNTY: Miami-Dade						GEOLOGIST: J. Liles					
SITE DESCRIPTION: Turkey Point COL						DRILL MACHINE: CME-550 (Miller)						DRILLER: R. White/ J. Dugger						GROUND WATER (ft)					
BORING NO.: B-703						DRILL METHOD: Mud Rotary/ Core						SAMPLE METHODS: SPT/Core						0 HR. NA					
GROUND ELEV.: -1.3 ft (NAVD88)						NORTHING: 397,018 US ft (NAD83/90)						EASTING: 875,846 US ft (NAD83/90)						24 HR. NA					
TOTAL DEPTH: 150.0 ft						BORING DIAMETER: 4" to 27.9', 3" to 150.0'						CASING DEPTH: 4" to 27.9', 3" to 115.0'						HAMMER (ID): 140 lb. Auto (M06)					
DATE STARTED: 2/22/08						COMPLETED: 2/25/08						CORE SIZE: HQ3						BITS USED: 2 7/8" Roller Cone					
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT						SAMP.	MOI	LOG	SOIL AND ROCK DESCRIPTION									
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO.												
-150.9					Continued from previous page																		
														Silty SAND (SM), greenish gray (10Y5/1), medium dense, wet, fine to coarse grained sand, strong HCl reaction (<i>continued</i>) Boring Terminated at Elevation -151.3 ft									

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/18/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: J. Liles
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger	GROUND WATER (ft)
BORING NO.: B-703	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 397,018 US ft (NAD83/90)	EASTING: 875,846 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.0 ft	CASING DEPTH: 4" to 27.9', 3" to 115.0'	HAMMER (ID): 140 lb. Auto (M06)	
DATE STARTED: 2/22/08	COMPLETED: 2/25/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS
										Begin Coring @ 16.2 ft
-17.5	16.2	2.6	4:00	(2.5)	(1.8)	RUN-1	(3.9)	(1.8)		LIMESTONE, boundstone, white (2.5Y8/1), soft, wet, friable to moderately indurated, strong HCl reaction (Miami Formation) (continued)
-20.1	18.8		2:00	96%	69%		44%	20%		16.2ft: white (5Y8/1), soft, friable to moderately indurated, strong HCl reaction, locally interconnected vugs, oolitic
		5.0	1:30/0.6	(1.4)	(0.0)	RUN-2				18.8ft: trace shell fragments
			1:00	28%	0%					
			1:30							
			0:30							
			1:10							
-25.1	23.8		2:00							
		5.0	0:30	(3.0)	(2.4)	RUN-3				
			0:30	60%	48%					
			1:00				(16.5)	(15.1)		LIMESTONE, boundstone, white (5Y8/1), moderately hard, indurated, coralline, little vugs (Upper Fort Thompson Formation)
			1:30				93%	85%		
			2:00							
-30.1	28.8									
		4.0	1:30	(3.5)	(2.8)	RUN-4				28.8ft: white (2.5Y8/1), hard, recrystallized calcite, fossiliferous
			2:30	88%	70%					
			2:30							31.0ft: loss of circulation
			1:30							
-34.1	32.8									
		5.0	1:40	(5.0)	(5.0)	RUN-5				
			2:58	100%	100%					
			2:34							
			3:30							
			4:23							
-39.1	37.8									
		5.0	3:33	(5.0)	(4.9)	RUN-6				37.8ft: white (2.5Y8/1) to 39.0ft, then bluish gray (5PB6/1) to 42.8ft
			3:27	100%	98%					
			3:41							
			3:05							
			4:03							
-44.1	42.8									
		5.0	3:16	(5.0)	(5.0)	RUN-7	(55.9)	(46.8)		LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, few vugs, fossiliferous, trace shell molds and casts (Lower Fort Thompson Formation)
			4:03	100%	100%		87%	73%		
			4:22							
			2:30							
			3:52							
-49.1	47.8									
		5.0	1:31	(3.8)	(3.4)	RUN-8				
			2:11	76%	68%					
			2:23							
			1:46							
			2:48							
-54.1	52.8									
		5.0	2:15	(5.0)	(4.1)	RUN-9				52.8ft: little vugs
			3:08	100%	82%					
			3:09							
			3:28							
			2:35							
-59.1	57.8									
		5.0	2:13	(3.9)	(3.3)	RUN-10				
			4:19	78%	66%					
			3:00							
			1:25							
			1:11							
-64.1	62.8									
		5.0	2:26	(4.3)	(3.3)	RUN-11				
			1:31	86%	66%					
			3:23							
			2:54							
			3:31							
-69.1	67.8									
		5.0	3:08	(5.0)	(4.9)	RUN-12				67.8ft: white (10YR8/1), few vugs
			4:02	100%	98%					
			4:28							
			2:32							
			3:11							
-74.1	72.8									
		5.0	2:30	(4.7)	(4.2)	RUN-13				
			1:48	94%	84%					
			1:48							
			2:03							
			1:15							
-79.1	77.8									
		5.0	0:31	(4.3)	(3.0)	RUN-14				
			1:50	86%	60%					
			3:57							
			3:49							
			7:07							
-84.1	82.8									
		5.0	2:13	(4.7)	(4.1)	RUN-15				
			1:00	94%	82%					
			0:54							
			0:52							
			0:38							
-89.1	87.8									
		5.0	0:21	(2.3)	(0.0)	RUN-16				87.8ft: moderately hard
			0:14	46%	0%					
			0:49							

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 8/18/08

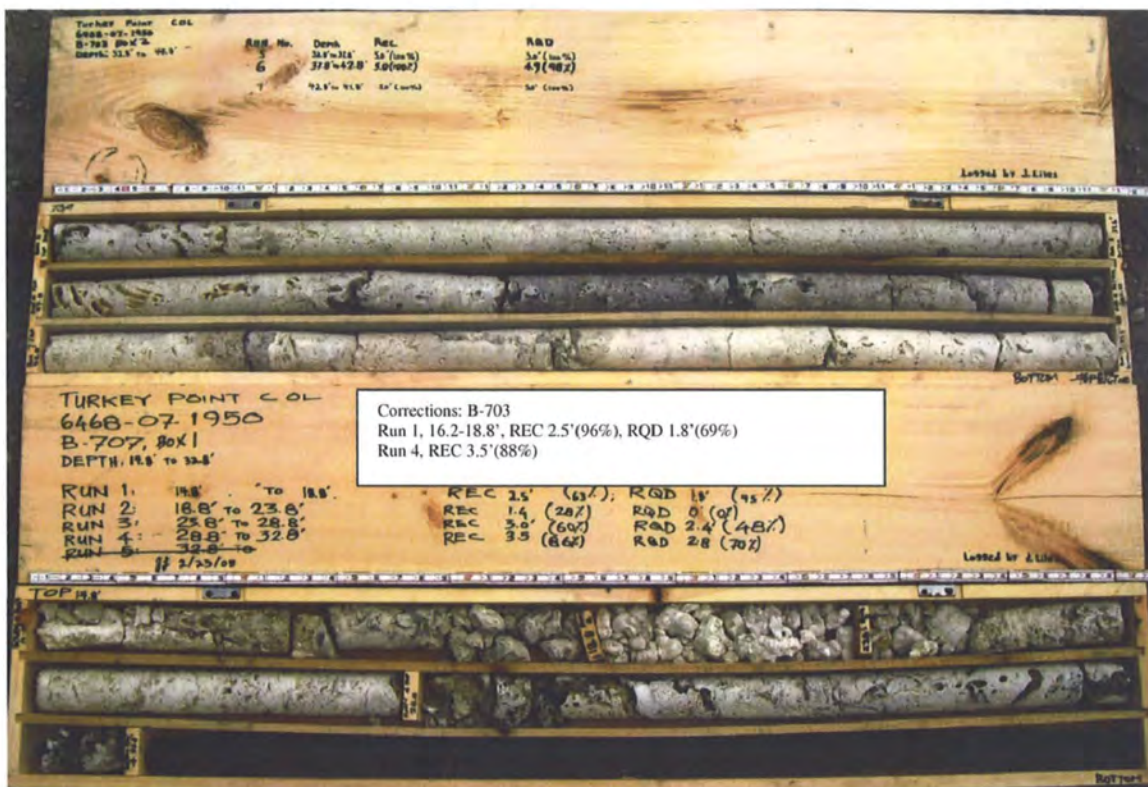


SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: J. Liles
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger	GROUND WATER (ft)
BORING NO.: B-703	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 397,018 US ft (NAD83/90)	EASTING: 875,846 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 150.0 ft	CASING DEPTH: 4" to 27.9', 3" to 115.0'	HAMMER (ID): 140 lb. Auto (M06)	
DATE STARTED: 2/22/08	COMPLETED: 2/25/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

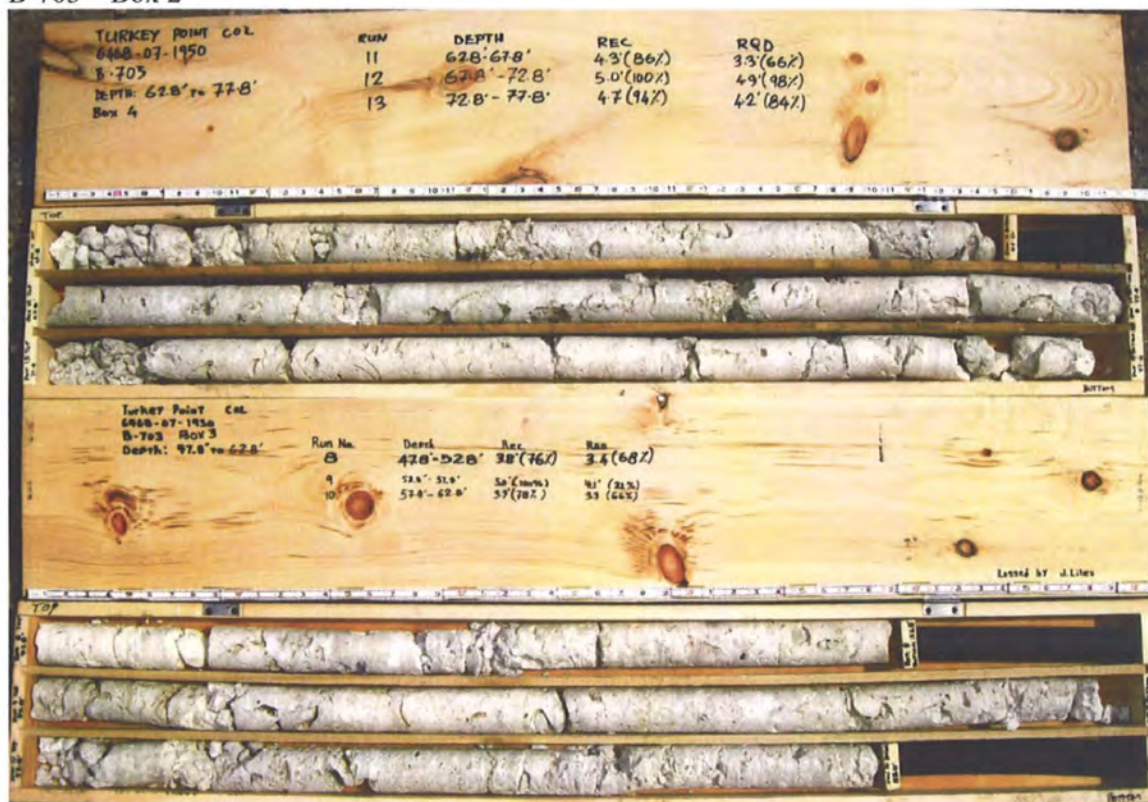
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
Continued from previous page										
-94.1	92.8	5.0	0:23 0:34	(4.7) 94%	(4.0) 80%	RUN-17				LIMESTONE, boundstone, white (2.5Y8/1), hard, indurated, few vugs, fossiliferous, trace shell molds and casts (Lower Fort Thompson Formation) (continued) 92.8ft: little vugs, little shell molds and casts
-99.1	97.8	5.0	0:23 0:40 0:53 0:56 0:47	(4.7) 94%	(4.2) 84%	RUN-18				97.8ft: hard
-104.1	102.8	5.0	0:37 0:37 0:44 1:00 0:36	(3.5) 70%	(3.3) 66%	RUN-19				102.8ft: few shell molds and casts
-109.1	107.8	5.0	0:36 0:20 0:35 0:59 0:51	(0.0) 0%	(0.0) 0%	RUN-20	(0.0) 0%	(NA)		POORLY GRADED SAND with silt (SP-SM), light gray (5Y7/1), loose, wet, fine grained sand, few carbonate nodules, strong HCl reaction (Tamiami Formation)
-114.1	112.8		0:23 0:21 0:40 0:18 0:43							Coring Terminated at Elevation -114.1

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8/18/08



B-703 - Box 1

B-703 - Box 2



B-703 - Box 3

B-703 - Box 4



B-703 - Box 5
B-703 - Box 6



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)	
BORING NO.: B-704(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 396,931 US ft (NAD83/90)				EASTING: 875,742 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 151.5 ft				CASING DEPTH: 4" to 36.0', 3" to 118.0'						HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 2/25/08		COMPLETED: 2/27/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %		SAMP. NO.	STRATA REC (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS		
											Begin Coring @ 37.5 ft		
-38.9	37.5	2.5	0.25/0.5	(1.5)	(0.6)	RUN-1	(8.9)	(7.4)			LIMESTONE, boundstone, white (5Y8/1), very soft, wet, friable to indurated, strong HCl reaction, fossiliferous, trace sand (Upper Fort Thompson Formation)		
-41.4	40.0		3.04	60%	24%		88%	73%					
-42.4	41.0	1.0	3.41	(1.0)	(1.0)	RUN-2							
		5.0	1:13	100%	100%	RUN-3					28.5ft: total loss of circulation (continued)		
			1:38	(4.8)	(4.8)						37.5ft: white (5Y8/1), hard, indurated, strong HCl reaction, fossiliferous.		
			1:38	96%	96%						coralline, few vugs		
			1:13								41.0ft: recrystallized calcite		
-47.4	46.0		2:14										
		5.0	0:52	(4.5)	(3.4)	RUN-4					46.0ft: light gray (5Y7/1) to 47.6ft		
			0:46	90%	68%		(49.8)	(37.1)			47.6		
-52.4	51.0		3:05				76%	56%			LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, few vugs, few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation)		
		5.0	4:20										
			3:25										
		5.0	2:51	(4.9)	(4.9)	RUN-5							
			1:23	98%	98%								
-57.4	56.0		1:39										
			1:51										
		5.0	0:55								56.0ft: friable zones, fine grained sand lense		
			2:22	(4.5)	(3.0)	RUN-6							
			1:18	90%	60%								
-62.4	61.0		1:07										
			1:45								64.0 to 65.0ft: calcareous fine grained sand		
		5.0	2:11										
			0:55	(5.0)	(4.6)	RUN-7							
-67.4	66.0		0:59	100%	92%								
			0:57										
		5.0	1:06										
-72.4	71.0		2:14										
			1:04	(2.2)	(0.5)	RUN-8							
			0:56	44%	10%								
		5.0	0:41										
-77.4	76.0		0:31								71.0ft: soft friable zones, trace fine grained calcareous sand		
			1:21										
		5.0	1:06	(1.3)	(0.0)	RUN-9							
			1:31	26%	0%								
-82.4	81.0		0:19										
			0:05								76.0ft: moderately hard, moderately indurated		
		5.0	0:23	(2.0)	(0.4)	RUN-10							
			0:20	40%	8%								
-87.4	86.0		0:26										
			2:18								81.0ft: moderately hard to hard, moderately indurated to indurated		
		5.0	1:04	(2.6)	(1.4)	RUN-11					85.0 to 85.5ft: friable zone		
			0:51	52%	28%								
-92.4	91.0		0:53										
			0:27										
		5.0	0:59	(5.0)	(4.5)	RUN-12					86.0ft: three thin, soft, friable zones at 86.3, 88.7 and 90.3ft		
			3:37	100%	90%								
-97.4	96.0		4:15										
			3:04								91.0ft: two thin, soft, friable zones at 93.0 and 95.4ft		
		5.0	2:02	(4.2)	(3.1)	RUN-13							
			3:05	84%	62%								
-102.4	101.0		1:02										
			0:41										
		5.0	1:22	(3.5)	(3.1)	RUN-14					96.0ft: little vugs		
			0:53	70%	62%								
			1:55										
-107.4	106.0		2:02										
			1:21	(5.0)	(5.0)	RUN-15							
			0:09	100%	100%								
-112.4	111.0		2:43										
		5.0	1:57										
			1:25	(4.2)	(3.6)	RUN-16					106.0ft: few vugs		
			1:06	84%	72%								
		5.0	1:10										
			0:59										
			1:39										
		5.0	0:45	(2.5)	(0.6)	RUN-17							
			1:07										
			0:49										
			1:01										
			0:45										
		5.0	0:55										

TURKEY POINT COL CORE: TURKEY POINT GPJ TURKEY POINT COL GDI 8/18/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: R. Clark
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-704(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 396,931 US ft (NAD83/90)	EASTING: 875,742 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 151.5 ft	CASING DEPTH: 4" to 36.0', 3" to 118.0'	HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 2/25/08	COMPLETED: 2/27/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-117.4	116.0		0:59 1:12 0:42 0:51	50%	12%		(0.0) 0%	(NA)		-114.9 Silty SAND (SM), white (5Y8/1), medium dense, wet, strong HCl reaction, calcareous, trace shell fragments, fine grained sand (Tamiami Formation) Coring Terminated at Elevation -117.4
										113.5 116.0

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 8-18-08



GEOTECHNICAL BORING LOG

Prepared By SPX Date 8-19-08Checked By STC Date 8/19/08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade		GEOLOGIST: R. Clark				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-750 (Miller)					DRILLER: G.Bilbrey/P.McKorkle/J.Tucker			GROUND WATER (ft)			
BORING NO.: B-704(DH)					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core			0 HR. NA			
GROUND ELEV.: -1.4 ft (NAVD88)					NORTHING: 396,931 US ft (NAD83/90)					EASTING: 875,742 US ft (NAD83/90)			24 HR. NA			
TOTAL DEPTH: 151.5 ft			BORING DIAMETER: 4" to 36.0', 3" to 151.5'					CASING DEPTH: 4" to 36.0', 3" to 118.0'			HAMMER (ID): 140 lb. Auto (07)					
DATE STARTED: 2/25/08			COMPLETED: 2/27/08			CORE SIZE: HQ3			BITS USED: 2 15/16" Drag Bit & 3 7/8" Tricones							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100						
-1.4					Ground Surface											
-1.4	0.0	WOH	WOH	WOH	0									-1.4	0.0	MUCK, greenish brown (10YR5/2), very soft, wet, strong HCl reaction, mostly organics
-3.8	2.4	3	4	5	9						704(DH)-1			-4.5	3.1	
-6.4	5.0	6	6	5	11						704(DH)-2A&B					2.4ft: grayish brown (2.5Y5/2), to dark grayish brown (2.5Y4/2), soft
-8.8	7.4	6	3	5	8						704(DH)-3					LIMESTONE, boundstone, white (5Y8/1), very soft, friable, wet, strong HCl reaction (Miami Formation)
-11.3	9.9	2	5	4	9						704(DH)-4					3.1ft: some loss of circulation
-13.9	12.5	9	17	21	38						704(DH)-5					5.0ft: fossiliferous, oolitic
-16.4	15.0	4	8	10	18						704(DH)-6					12.5ft: medium hard
-19.4	18.0	29	17	6	23						704(DH)-7					15.0ft: very soft
-24.6	23.2	3	5	7	12						704(DH)-8					18.0ft: soft
-29.9	28.5	1	1	1	2						704(DH)-9					23.2ft: very soft
-31.9	30.5	4	2	4	6						704(DH)-10					LIMESTONE, boundstone, white (5Y8/1), very soft, wet, friable to indurated, strong HCl reaction, fossiliferous, trace sand (Upper Fort Thompson Formation)
-37.4	36.0	9	14	16	30						704(DH)-11					28.5ft: total loss of circulation
-38.9	37.5										704(DH)-12					30.5ft: friable, some fine to medium grained sand
-41.4	40.0										RUN-1					36.0ft: soft, moderately indurated, trace recrystallized calcite, trace chert
-42.4	41.0										RUN-2					37.5ft: Switch sampling method to coring
-47.4	46.0										RUN-3					37.5ft: white (5Y8/1), hard, indurated, strong HCl reaction, fossiliferous, coralline, few vugs
-52.4	51.0										RUN-4					41.0ft: recrystallized calcite
-57.4	56.0										RUN-5					46.0ft: light gray (5Y7/1) to 47.6ft
-62.4	61.0										RUN-6					LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, few vugs, few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation)
-67.4	66.0										RUN-7					56.0ft: friable zones, fine grained sand lense
-72.4	71.0										RUN-8					64.0 to 65.0ft: calcareous fine grained sand
											RUN-9					71.0ft: soft friable zones, trace fine grained calcareous sand

TURKEY POINT COL BORE TURKEY POINT COL GDT 8/18/08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker		GROUND WATER (ft)			
BORING NO.: B-704(DH)				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core		0 HR.	NA		
GROUND ELEV.: -1.4 ft (NAVD88)				NORTHING: 396,931 US ft (NAD83/90)				EASTING: 875,742 US ft (NAD83/90)		24 HR.	NA		
TOTAL DEPTH: 151.5 ft		BORING DIAMETER: 4" to 36.0', 3" to 151.5'				CASING DEPTH: 4" to 36.0', 3" to 118.0'		HAMMER (ID): 140 lb. Auto (07)					
DATE STARTED: 2/25/08		COMPLETED: 2/27/08		CORE SIZE: HQ3				BITS USED: 2 15/16" Drag Bit & 3 7/8" Tricones					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	▼ MOI	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-76.2					Continued from previous page								
-77.4	76.0												LIMESTONE, boundstone, white (5Y8/1), hard, indurated, fossiliferous, porous, few vugs, few shell molds and casts, strong HCl reaction (Lower Fort Thompson Formation) (continued) 76.0ft: moderately hard, moderately indurated
-82.4	81.0												81.0ft: moderately hard to hard, moderately indurated to indurated 85.0 to 85.5ft: friable zone
-87.4	86.0												86.0ft: three thin, soft, friable zones at 86.3, 88.7 and 90.3ft
-92.4	91.0												91.0ft: two thin, soft, friable zones at 93.0 and 95.4ft
-97.4	96.0												96.0ft: little vugs
-102.4	101.0												
-107.4	106.0												106.0ft: few vugs
-112.4	111.0												
-117.4	116.0												
-121.4	120.0	4	5	6									116.0ft: Silty SAND (SM), white (5Y8/1), medium dense, wet, strong HCl reaction, calcareous, trace shell fragments, fine grained sand (Tamiami Formation) 116.0ft: Switch sampling method to SPT
-124.4	123.0	3	3	5									120.0ft: loose, little shell fragments, limestone fragments
-129.4	128.0	4	2	1									123.0ft: pale yellow (5Y8/2), very loose, weak HCl reaction
-134.4	133.0	4	2	2									
-139.4	138.0	3	3	4									133.0ft: loose, fine to coarse grained sand, fine gravel
-144.4	143.0	4	7	5									138.0ft: greenish gray (10Y6/1), medium dense, trace shell fragments, fine to coarse gravel
-149.4	148.0	6	7	8									
		7	7	9									

TURKEY POINT COL BORE TURKEY POINT COL GDT 8/18/08



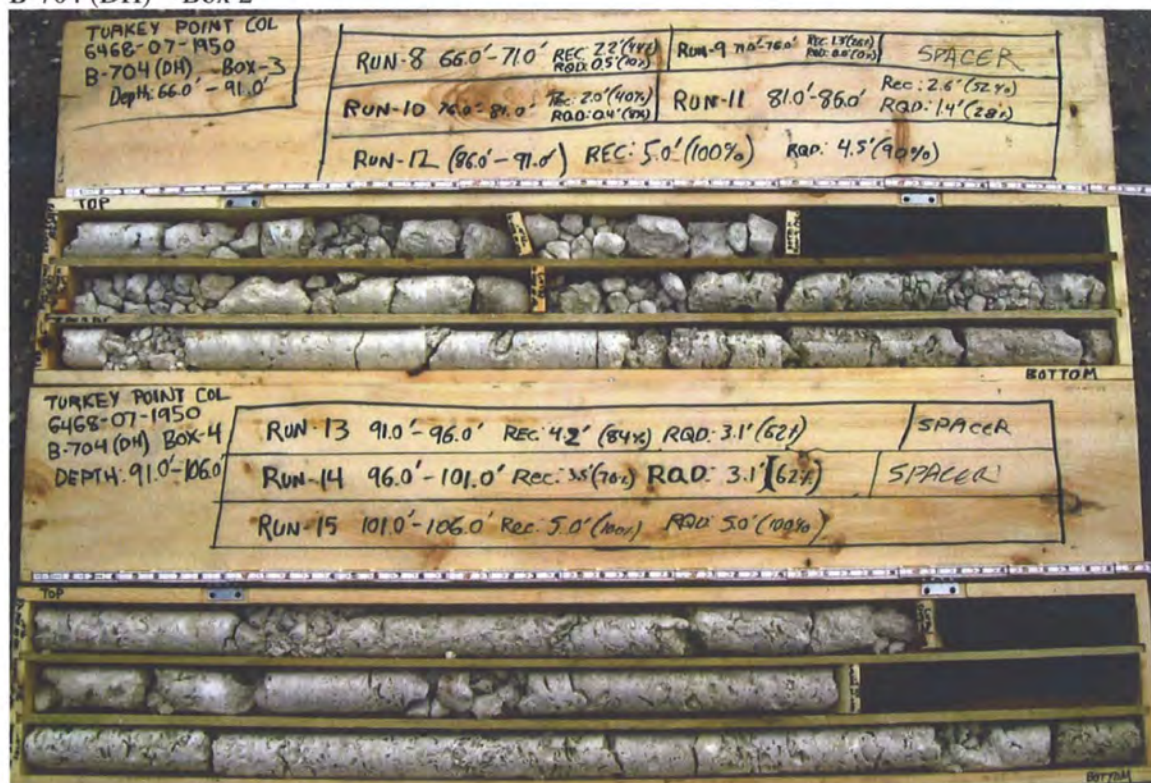
SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: R. Clark									
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-750 (Miller)		DRILLER: G.Bilbrey/P.McKorkle/J.Tucker		GROUND WATER (ft)									
BORING NO.: B-704(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA									
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,931 US ft (NAD83/90)		EASTING: 875,742 US ft (NAD83/90)		24 HR. NA									
TOTAL DEPTH: 151.5 ft		BORING DIAMETER: 4" to 36.0', 3" to 151.5'		CASING DEPTH: 4" to 36.0', 3" to 118.0'		HAMMER (ID):140 lb. Auto (07)									
DATE STARTED: 2/25/08		COMPLETED: 2/27/08		CORE SIZE: HQ3		BITS USED: 2 15/16" Drag Bit & 3 7/8" Tricones									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-151.0					Continued from previous page										
-151.4	150.0	8	7	8	● 15						704(DH)-21			-152.9	151.5
Boring Terminated at Elevation -152.9 ft															

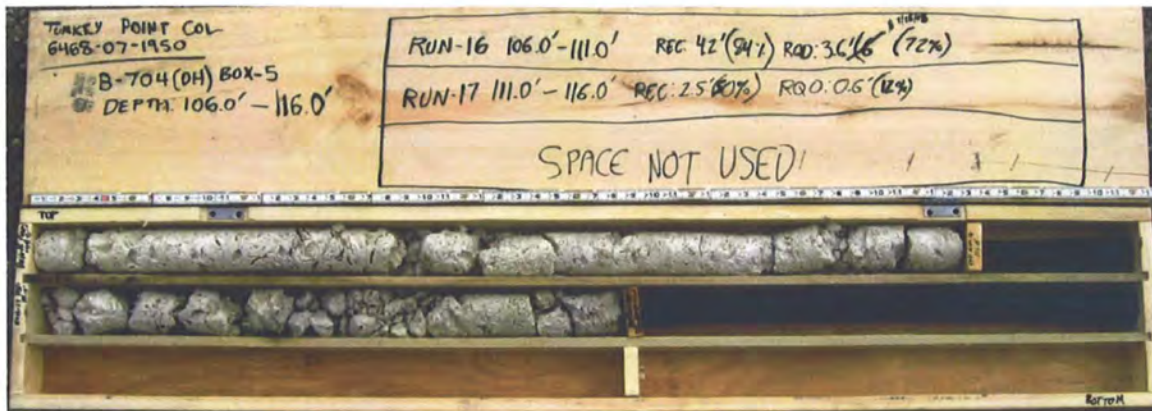
TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 8/18/08



B-704 (DH) – Box 1
B-704 (DH) – Box 2



B-704 (DH) – Box 3
B-704 (DH) – Box 4



B-704 (DH) - Box 5

GEOTECHNICAL BORING LOG

Prepared By 227 Date 5-30-08

Checked By TDW Date 5-30-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: S. Woodham				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550X (ATL)					DRILLER: P. Pitts/ R. Landeros					GROUND WATER (ft)		
BORING NO.: B-705					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA		
GROUND ELEV.: -1.3 ft (NAVD88)					NORTHING: 396,919 US ft (NAD83/90)					EASTING: 875,846 US ft (NAD83/90)					24 HR. NA		
TOTAL DEPTH: 200.0 ft			BORING DIAMETER: 4" to 35.0', 3" to 200.0'					CASING DEPTH: 4" to 35.0', 3" to 135.0'					HAMMER (ID): 140 lb. Auto (MEC-05)				
DATE STARTED: 2/22/08			COMPLETED: 2/24/08			CORE SIZE: HQ3			BITS USED: 2 15/16" Roller Cone								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION				
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100							
-1.3					Ground Surface												
-1.3	0.0	WOH	WOH	WOH	0						705-1		-1.3		0.0		
-3.8	2.5				WOH						705-2		-4.2	MUCK, very dark brown (10YR2/2), very soft, wet	2.9		
		3	11	11			22										
-6.6	5.3										705-3			LIMESTONE, boundstone, white (5Y8/1), soft, moderately indurated, wet, strong HCl reaction (Miami Formation)			
-8.8	7.5	7	9	7			16				705-4			5.3ft: very soft			
		6	4	8			12				705-5			7.5ft: fossiliferous, oolitic			
-11.3	10.0	5	7	12			19				705-6						
-13.8	12.5	7	8	25			33				705-7			12.5ft: medium hard			
-16.3	15.0	14	14	22			36				705-8						
-19.8	18.5	4	4	8			12				705-9			18.5ft: very soft			
		6	10	5			15				705-10						
-24.8	23.5	15	22	17			39				705-11		-28.3	LIMESTONE, boundstone, white (5Y8/1), medium hard, moderately indurated, wet, strong HCl reaction, fossiliferous (Upper Fort Thompson Formation)	27.0		
-29.8	28.5	9	8	12			20				RUN-1			28.0ft: loss of circulation			
-34.8	33.5										RUN-2			33.5ft: very soft			
-36.3	35.0										RUN-3			35.0ft: Switch sampling method to coring			
-39.8	38.5										RUN-4			35.0ft: white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, coralline			
											RUN-5			38.5ft: recrystallized calcite			
-44.8	43.5										RUN-6						
-49.8	48.5										RUN-7		-48.6	43.5ft: white (10YR8/1) to 45.8ft then gray (2.5Y6/1) to 47.3ft, little vugs	47.3		
-54.8	53.5										RUN-8			LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, little vugs, few recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation)			
-59.8	58.5										RUN-9			48.5ft: few vugs			
-64.8	63.5													58.5ft: extremely indurated			
-69.8	68.5													63.5ft: indurated			
-74.8	73.5													68.5ft: some vugs			
														73.5ft: little vugs			



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade		GEOLOGIST: S. Woodham			
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550X (ATL)					DRILLER: P. Pitts/ R. Landeros			GROUND WATER (ft)		
BORING NO.: B-705					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core			0 HR. NA		
GROUND ELEV.: -1.3 ft (NAVD88)					NORTHING: 396,919 US ft (NAD83/90)					EASTING: 875,846 US ft (NAD83/90)			24 HR. NA		
TOTAL DEPTH: 200.0 ft			BORING DIAMETER: 4" to 35.0', 3" to 200.0'					CASING DEPTH: 4" to 35.0', 3" to 135.0'			HAMMER (ID): 140 lb. Auto (MEC-05)				
DATE STARTED: 2/22/08			COMPLETED: 2/24/08			CORE SIZE: HQ3			BITS USED: 2 15/16" Roller Cone						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-76.1					Continued from previous page										
-79.8	78.5														LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, little vugs, few recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation) (continued) 78.5ft: moderately hard to hard, moderately indurated to indurated, few vugs
-84.8	83.5														83.5ft: hard, indurated
-89.8	88.5														88.5ft: mostly shell molds and casts
-94.8	93.5														
-99.8	98.5														
-104.8	103.5														103.5ft: extremely indurated
-109.8	108.5														108.5ft: indurated
-114.8	113.5														113.5ft: very soft, friable
-119.8	118.5	4	6	8											Silty SAND (SM), greenish gray (10YR6/1), medium dense, wet, fine to coarse grained sand, weak HCl reaction, little fines, trace shell fragments, fine gravel (Tamiami Formation) 118.5ft: Switch sampling method to SPT 118.5ft: no recovery
-124.8	123.5	5	12	8											123.5ft: LIMESTONE, boundstone, pale yellow (2.5Y7/3), very soft, friable, wet, strong HCl reaction, fragmented, sandy
-129.8	128.5	4	4	7											
-134.8	133.5	5	8	11											133.5ft: few cemented sand pockets
-139.8	138.5	4	5	6											138.5ft: greenish gray (5GY6/1), strong HCl reaction, fine to medium grained sand
-144.8	143.5	7	11	11											143.5ft: trace shell fragments
-149.8	148.5	5	8	14											

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5/30/08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade		GEOLOGIST: S. Woodham			
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550X (ATL)					DRILLER: P. Pitts/ R. Landeros				GROUND WATER (ft)	
BORING NO.: B-705					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.3 ft (NAVD88)					NORTHING: 396,919 US ft (NAD83/90)					EASTING: 875,846 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 200.0 ft			BORING DIAMETER: 4" to 35.0', 3" to 200.0'					CASING DEPTH: 4" to 35.0', 3" to 135.0'				HAMMER (ID): 140 lb. Auto (MEC-05)			
DATE STARTED: 2/22/08			COMPLETED: 2/24/08			CORE SIZE: HQ3			BITS USED: 2 15/16" Roller Cone						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	▼ MOI	L O G	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-150.9					Continued from previous page										
-154.8	153.5	3	6	9		15					705-19			148.5ft: weak HCl reaction Silty SAND (SM), greenish gray (10YR6/1), medium dense, wet, fine to coarse grained sand, weak HCl reaction, little fines, trace shell fragments, fine gravel (Tamiami Formation) (continued)	
-159.8	158.5	3	5	7		12					705-20				
-164.8	163.5	5	6	14		20					705-21				
-169.8	168.5	3	5	10		15					705-22				
-174.8	173.5	2	3	4		7					705-23		-174.8	173.5 Sandy SILT (ML), greenish gray (5GY6/1), loose, wet, fine grained sand, strong HCl reaction	
-179.8	178.5	2	3	4		7					705-24				
-184.8	183.5	2	5	15		20					705-25			183.5ft: very stiff	
-189.8	188.5	2	3	6		9					705-26			188.5ft: stiff, strong HCl reaction	
-194.8	193.5	2	3	10		13					705-27				
-199.8	198.5	3	5	15		20					705-28		-201.3	198.5ft: very stiff Boring Terminated at Elevation -201.3 ft	
														200.0	

TURKEY POINT COL BORE: TURKEY POINT.GPJ TURKEY POINT COL.GDT 5:30/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: P. Pitts/ R. Landeros	GROUND WATER (ft)
BORING NO.: B-705	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 396,919 US ft (NAD83/90)	EASTING: 875,846 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 200.0 ft	CASING DEPTH: 4" to 35.0', 3" to 135.0'	HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 2/22/08	COMPLETED: 2/24/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Begin Coring @ 35.0 ft
-36.3	35.0	3.5	1:50 1:27 1:28	(1.6) 46%	(0.4) 11%	RUN-1	(10.2) 83%	(7.2) 59%		LIMESTONE, boundstone, white (5Y8/1), medium hard, moderately indurated, wet, strong HCl reaction, fossiliferous (Upper Fort Thompson Formation)
-39.8	38.5	5.0	0:53/0.5 0:50 0:59 0:45 0:52 0:59	(4.8) 96%	(4.0) 80%	RUN-2				28.0ft: loss of circulation (<i>continued</i>) 35.0ft: white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, coralline 38.5ft: recrystallized calcite
-44.8	43.5	5.0	1:00 2:05 1:06 0:49 1:02	(5.0) 100%	(2.8) 56%	RUN-3				43.5ft: white (10YR8/1) to 45.8ft then gray (2.5Y6/1) to 47.3ft, little vugs
-49.8	48.5	5.0	1:12 1:04 1:17 1:14 0:49	(5.0) 100%	(4.4) 88%	RUN-4	(50.6) 75%	(32.6) 48%	-48.6	LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, little vugs, few recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation) 48.5ft: few vugs
-54.8	53.5	5.0	0:57 0:48 0:58 0:45 0:58	(4.9) 98%	(2.1) 42%	RUN-5				
-59.8	58.5	5.0	0:38 0:44 1:20 1:15 1:06	(5.0) 100%	(5.0) 100%	RUN-6				58.5ft: extremely indurated
-64.8	63.5	5.0	0:44 0:51 0:35 0:47 0:35	(3.1) 62%	(2.0) 40%	RUN-7				63.5ft: indurated
-69.8	68.5	5.0	0:48 0:47 0:32 0:28 0:23	(2.0) 40%	(0.4) 8%	RUN-8				68.5ft: some vugs
-74.8	73.5	5.0	0:48 0:47 0:40 0:58 1:07	(4.2) 84%	(1.8) 36%	RUN-9				73.5ft: little vugs
-79.8	78.5	5.0	0:42 0:32 0:40 0:45 0:48	(4.2) 84%	(2.2) 44%	RUN-10				78.5ft: moderately hard to hard, moderately indurated to indurated, few vugs
-84.8	83.5	5.0	0:25 0:31 0:45 1:21 1:58	(3.8) 76%	(2.4) 48%	RUN-11				83.5ft: hard, indurated
-89.8	88.5	5.0	0:38 0:33 0:40 0:36 0:37	(4.0) 80%	(2.3) 46%	RUN-12				88.5ft: mostly shell molds and casts
-94.8	93.5	5.0	0:25 0:33 1:29 0:27 0:25	(0.8) 16%	(0.0) 0%	RUN-13				
-99.8	98.5	5.0	0:23 0:32 0:31 0:39 0:39	(3.7) 74%	(2.3) 46%	RUN-14				
-104.8	103.5	5.0	0:48 0:41 0:32 0:34 0:30	(5.0) 100%	(5.0) 100%	RUN-15				103.5ft: extremely indurated
-109.8	108.5	5.0	0:31	(3.4)	(2.7)	RUN-16				108.5ft: indurated

TURKEY POINT COL CORE TURKEY POINT GPT TURKEY POINT COL GDT 5:30:08



SHEET 2 OF 2

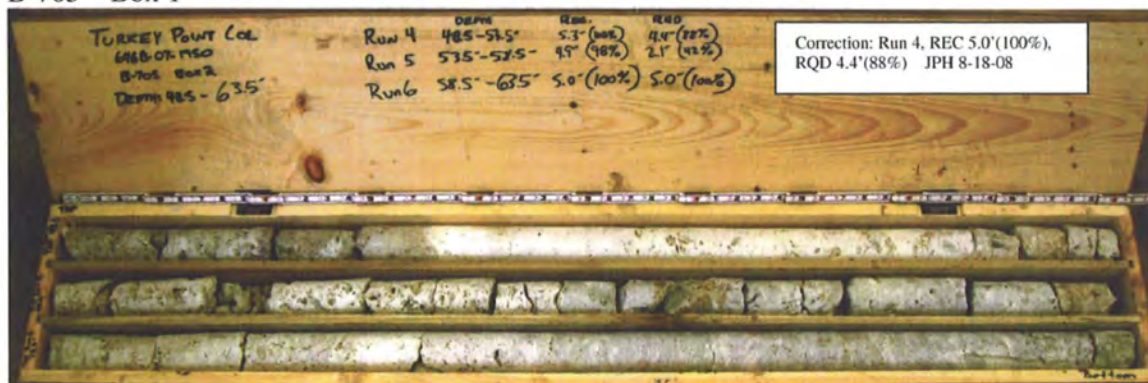
BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: S. Woodham
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550X (ATL)	DRILLER: P. Pitts/ R. Landeros	GROUND WATER (ft)
BORING NO.: B-705	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.3 ft (NAVD88)	NORTHING: 396,919 US ft (NAD83/90)	EASTING: 875,846 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 200.0 ft	CASING DEPTH: 4" to 35.0', 3" to 135.0'	HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 2/22/08	COMPLETED: 2/24/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-114.8	113.5		0:26 0:27 0:31 0:25	68%	54%					LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, little vugs, few recrystallized calcite, strong HCl reaction (Lower Fort Thompson Formation) (continued)
		5.0	1:18 0:29 0:30 0:35 0:31	(0.3) 6%	(0.0) 0%	RUN-17	(0.0) 0%	(NA)		113.5ft: very soft, friable
-119.8	118.5									Silty SAND (SM), greenish gray (10YR6/1), medium dense, wet, fine to coarse grained sand, weak HCl reaction, little fines, trace shell fragments, fine gravel (Tamiami Formation)
										Coring Terminated at Elevation -119.8

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 5.30-08



B-705 - Box 1



B-705 - Box 2



B-705 - Box 3



B-705 - Box 4



B-705 - Box 5



BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: R. Clark				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-750 (Miller)					DRILLER: G.Bilbrey/P.McKorkle/J.Tucker					GROUND WATER (ft)		
BORING NO.: B-706					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA		
GROUND ELEV.: -1.2 ft (NAVD88)					NORTHING: 396,963 US ft (NAD83/90)					EASTING: 875,885 US ft (NAD83/90)					24 HR. NA		
TOTAL DEPTH: 151.9 ft			BORING DIAMETER: 3" to 151.9'					CASING DEPTH: 3" to 117.3'					HAMMER (ID): 140 lb. Auto (07)				
DATE STARTED: 2/9/08			COMPLETED: 2/13/08			CORE SIZE: HQ3			BITS USED: 2 15/16" Drag Bit & 2 15/16" Roller Cone								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION				
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100							
-1.2					Ground Surface												
-1.2	0.0	WOH	WOH	WOH	0						706-1		-1.2	0.0			
-4.3	3.1										706-2		-4.4	3.2			
-7.2	6.0	7	6	7										Field notes do not indicate sample 706-2 was split into separate jars			
-9.2	8.0	5	50	29							706-3			LIMESTONE, boundstone, pale yellow (5Y8/2), very soft, moist to wet, strong HCl reaction (Miami Formation)			
-11.7	10.5	3	4	4							706-4			6.0ft: hard, fossiliferous, oolitic			
-14.1	12.9	4	9	48							706-5			8.0ft: very soft			
-16.9	15.7	8	19	11							706-6			10.5ft: hard			
-17.2	16.0	50/0.3									706-7			12.0ft: some loss of circulation			
											RUN-1			12.9ft: soft			
-22.2	21.0										RUN-2			15.7ft: hard			
-27.2	26.0	3	1	6							706-8		-25.7	16.0ft: Switch sampling method to coring			
-32.0	30.8										RUN-3			16.0ft: pale yellow (5Y8/2), hard, indurated, fossiliferous, little vugs, and white (N8/) cemented sands, blocky, strong HCl reaction			
-37.0	35.8										RUN-4		-32.4	24.5 to 25.0ft: soft zone			
-42.0	40.8										RUN-5			24.5ft: Switch sampling method to SPT			
-47.0	45.8										RUN-6			Silty SAND (SP-SM), pale yellow (5Y8/2), loose, wet, trace shell fragments, angular, gravel-size limestone fragments			
-52.0	50.8										RUN-7			24.5ft: total loss of circulation			
-57.0	55.8										RUN-8			30.8ft: Switch sampling method to coring			
-62.0	60.8										RUN-9			LIMESTONE, boundstone, pale yellow (5Y8/2), moderately hard, indurated, fossiliferous, little vugs, trace sand in vugs, strong HCl reaction, coralline (Upper Fort Thompson Formation)			
-67.0	65.8										RUN-10			45.8 white (5Y8/1) to 48.0ft, few vugs			
-72.0	70.8										RUN-11		-49.2	48.0			
														LIMESTONE, boundstone, pale yellow (5Y8/2), moderately hard, indurated, little vugs, porous, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)			
														50.8ft: white (5Y8/1), few vugs			
														69.7ft: 0.5ft-thick layer of sand			
														70.8ft: 0.2ft-thick layer of sand			

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT S. 18 US



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade				GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)			
BORING NO.: B-706				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR.		NA	
GROUND ELEV.: -1.2 ft (NAVD88)				NORTHING: 396,963 US ft (NAD83/90)				EASTING: 875,885 US ft (NAD83/90)				24 HR.		NA	
TOTAL DEPTH: 151.9 ft		BORING DIAMETER: 3" to 151.9'				CASING DEPTH: 3" to 117.3'				HAMMER (ID): 140 lb. Auto (07)					
DATE STARTED: 2/9/08		COMPLETED: 2/13/08		CORE SIZE: HQ3				BITS USED: 2 15/16" Drag Bit & 2 15/16" Roller Cone							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-76.0					Continued from previous page										
-77.0	75.8														LIMESTONE, boundstone, pale yellow (5Y8/2), moderately hard, indurated, little vugs, porous, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-82.0	80.8														80.8ft: little vugs 83.0ft to 84.0ft: soft zone
-87.0	85.8														85.8ft: few vugs 87.0ft to 90.0ft: soft zone
-92.0	90.8														91.0ft to 94.0ft: soft zone
-97.0	95.8														
-102.0	100.8														100.8ft: some vugs 104.0ft to 105.8ft: soft zone
-107.0	105.8														105.8ft: few vugs
-112.0	110.8														
-117.0	115.8	5	17	17											115.8ft: Switch sampling method to SPT POORLY GRADED SAND with silt (SP-SM), white (5Y8/1), dense, wet, fine to coarse grained sand, fine angular sandstone and limestone gravel fragments/lenses, weak HCl reaction (Tamiami Formation)
-122.0	120.8	3	4	8											120.8ft: pale yellow (5Y7/3), medium dense
-127.1	125.9	3	4	8											127.1ft: Silty SAND (SM), pale yellow (5Y7/3), medium dense, wet, fine to medium grained sand, fine gravel, strong HCl reaction
-131.6	130.4	3	4	5											130.4ft: light gray (5Y7/2), loose, trace shell fragments
-136.6	135.4	4	3	4											135.4ft: strong to weak HCl reaction, fine to coarse grained sand
-141.6	140.4	7	8	10											140.4ft: light olive gray (5Y6/2), medium dense, strong HCl reaction
-146.6	145.4	5	8	16											146.6ft: Silty GRAVEL with sand (GM), light olive gray (5Y6/2), medium dense, wet, fine to coarse gravel sized cemented sand fragments, fine to coarse grained sand, strong HCl reaction

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 8 18 08



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-750 (Miller)			DRILLER: G.Bilbrey/P.McKorkle/J.Tucker			GROUND WATER (ft)			
BORING NO.: B-706			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA			
GROUND ELEV.: -1.2 ft (NAVD88)			NORTHING: 396,963 US ft (NAD83/90)			EASTING: 875,885 US ft (NAD83/90)			24 HR. NA			
TOTAL DEPTH: 151.9 ft			BORING DIAMETER: 3" to 151.9'			CASING DEPTH: 3" to 117.3'			HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 2/9/08			COMPLETED: 2/13/08			CORE SIZE: HQ3			BITS USED: 2 15/16" Drag Bit & 2 15/16" Roller Cone			
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100		
-150.8					Continued from previous page							
-151.6	150.4	4	6	9	15					706-16	151.9	
Boring Terminated at Elevation -153.1 ft												

TURKEY POINT COL BORE TURKEY POINT GPI TURKEY POINT COL GDI 8/18/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker			GROUND WATER (ft)		
BORING NO.: B-706				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core			0 HR. NA		
GROUND ELEV.: -1.2 ft (NAVD88)				NORTHING: 396,963 US ft (NAD83/90)				EASTING: 875,885 US ft (NAD83/90)			24 HR. NA		
TOTAL DEPTH: 151.9 ft				CASING DEPTH: 3" to 117.3'						HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 2/9/08		COMPLETED: 2/13/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %		SAMP. NO.	STRATA REC (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS		
											Begin Coring @ 16.0 ft		
-17.2	16.0	5.0	2.20 3.18 0.58 0.53 0.52	(2.8) 56%	(0.9) 18%	RUN-1	(3.7) 44%	(0.9) 11%			LIMESTONE, boundstone, pale yellow (5Y8/2), very soft, moist to wet, strong HCl reaction (Miami Formation) (continued) 16.0ft: pale yellow (5Y8/2), hard, indurated, fossiliferous, little vugs, and white (N8/) cemented sands, blocky, strong HCl reaction		
-22.2	21.0	5.0	1.01 1.42 1.23 1.01 0.52	(0.9) 18%	(0.0) 0%	RUN-2					24.5 to 25.0ft: soft zone		
-27.2	26.0		N=7			706-8	(0.4) 21%	(NA)			24.5ft: Switch sampling method to SPT Silty SAND (SP-SM), pale yellow (5Y8/2), loose, wet, trace shell fragments, angular, gravel-size limestone fragments		
											24.5ft: total loss of circulation		
-32.0	30.8	5.0	0.56 0.56 1.24 2.12 1.12	(2.5) 50%	(0.9) 18%	RUN-3	(13.9) 86%	(10.4) 65%			30.8ft: Switch sampling method to coring LIMESTONE, boundstone, pale yellow (5Y8/2), moderately hard, indurated, fossiliferous, little vugs, trace sand in vugs, strong HCl reaction, coralline (Upper Fort Thompson Formation)		
-37.0	35.8	5.0	2.06 1.45 1.00 3.25 4.23	(4.6) 92%	(3.9) 78%	RUN-4							
-42.0	40.8	5.0	2.44 2.37 1.09 2.19 4.30	(5.0) 100%	(4.1) 82%	RUN-5							
-47.0	45.8	5.0	2.49 1.41 2.45 6.16 6.22	(4.3) 86%	(3.5) 70%	RUN-6					45.8 white (5Y8/1) to 48.0ft, few vugs		
-52.0	50.8	5.0	3.18 2.22 3.45 0.50 0.45	(3.6) 72%	(3.3) 66%	RUN-7	(51.1) 77%	(43.3) 66%			LIMESTONE, boundstone, pale yellow (5Y8/2), moderately hard, indurated, little vugs, porous, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) 50.8ft: white (5Y8/1), few vugs		
-57.0	55.8	5.0	1.05 5.40 1.32 1.30 1.20	(4.8) 96%	(4.1) 82%	RUN-8							
-62.0	60.8	5.0	1.11 1.12 0.38 1.09 1.47	(4.6) 92%	(4.6) 92%	RUN-9							
-67.0	65.8	5.0	1.20 0.54 1.09 0.53 1.16	(4.1) 82%	(3.5) 70%	RUN-10					69.7ft: 0.5ft-thick layer of sand		
-72.0	70.8	5.0	2.10 2.00 2.04 2.00 2.24	(5.0) 100%	(4.8) 96%	RUN-11					70.8ft: 0.2ft-thick layer of sand		
-77.0	75.8	5.0	1.44 2.13 1.25 1.47 2.17	(5.0) 100%	(5.0) 100%	RUN-12							
-82.0	80.8	5.0	0.45 0.57 0.58 1.02 0.28	(3.7) 74%	(3.0) 60%	RUN-13					80.8ft: little vugs 83.0ft to 84.0ft: soft zone		
-87.0	85.8	5.0	1.51 0.45 1.00 1.04 0.50	(2.8) 56%	(1.8) 36%	RUN-14					85.8ft: few vugs 87.0ft to 90.0ft: soft zone		
-92.0	90.8												

TURKEY POINT COL CORE TURKEY POINT GP TURKEY POINT COL GDT 8/18/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: R. Clark			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-750 (Miller)				DRILLER: G.Bilbrey/P.McKorkle/J.Tucker				GROUND WATER (ft)	
BORING NO.: B-706				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.2 ft (NAVD88)				NORTHING: 396,963 US ft (NAD83/90)				EASTING: 875,885 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 151.9 ft				CASING DEPTH: 3" to 117.3'						HAMMER (ID): 140 lb. Auto (07)			
DATE STARTED: 2/9/08		COMPLETED: 2/13/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS	
												Continued from previous page	
-97.0	95.8	5.0	0.25 0.15 0.58 0.59 0.41	(3.5) 70%	(2.2) 44%	RUN-15						91.0ft to 94.0ft: soft zone LIMESTONE, boundstone, pale yellow (5Y8/2), moderately hard, indurated, little vugs, porous, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)	
-102.0	100.8	5.0	1.20 0.45 0.39 0.45 0.51	(1.9) 38%	(0.7) 14%	RUN-16							
-107.0	105.8	5.0	0.45 0.48 0.38 0.46 0.45	(5.0) 100%	(4.8) 96%	RUN-17						100.8ft: some vugs 104.0ft to 105.8ft: soft zone	
-112.0	110.8	5.0	0.46 0.52 0.38 0.42 0.41	(4.1) 82%	(3.3) 66%	RUN-18						105.8ft: few vugs	
-117.0	115.8	5.0	1.43 0.37 0.35 0.29 0.19	(0.7) 14%	(0.0) 0%	RUN-19							
								(0.0) 0%	(NA)			-115.2 -117.0	114.0 115.8
												115.8ft: Switch sampling method to SPT POORLY GRADED SAND with silt (SP-SM), white (5Y8/1), dense, wet, fine to coarse grained sand, fine angular sandstone and limestone gravel fragments/lenses, weak HCl reaction (Tamiami Formation) Coring Terminated at Elevation -117.0	

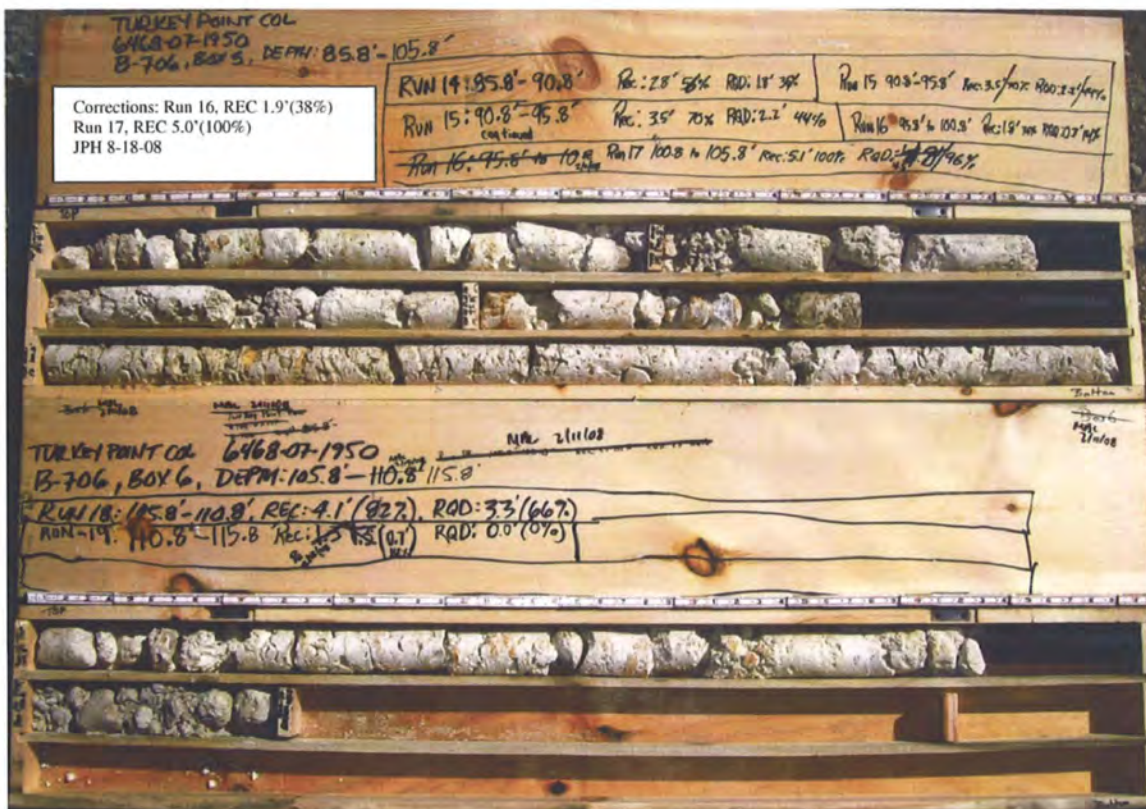
TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDT 8/18/08



B-706 - Box 1
B-706 - Box 2



B-706 - Box 3
B-706 - Box 4



B-706 - Box 5

B-706 - Box 6



GEOTECHNICAL BORING LOG

Prepared By DPH Date 5-30-08Checked By [Signature] Date 5-30-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: H. Lyatuu							
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550 (Miller)		DRILLER: R. White/ J. Dugger		GROUND WATER (ft)							
BORING NO.: B-707		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA							
GROUND ELEV.: -1.8 ft (NAVD88)		NORTHING: 396,829 US ft (NAD83/90)		EASTING: 875,791 US ft (NAD83/90)		24 HR. NA							
TOTAL DEPTH: 152.0 ft		BORING DIAMETER: 4" to 24.9', 3" to 152.0'		CASING DEPTH: 4" to 24.9', 3" to 110.0'		HAMMER (ID): 140 lb. Auto (M06)							
DATE STARTED: 2/13/08		COMPLETED: 2/21/08		CORE SIZE: HQ3		BITS USED: 2 15/16" & 3 7/8 Roller Cones							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-1.8					Ground Surface								
-1.8	0.0	WOH	WOH	WOH	0						707-1		-1.8
-4.3	2.5	WOH	2	2	4						707-2		-3.8
-6.8	5.0	2	7	8	15						707-3		2.0
-9.3	7.5	5	22	7	29						707-4		
-11.8	10.0	2	5	10	15						707-5		
-14.3	12.5	1	3	7	10						707-6		
-16.8	15.0	2	5	13	18						707-7		
-21.8	20.0	3	19	33	52						707-8		
-26.8	25.0										707-9		-25.8
-27.1	25.3	50/0.3									RUN-1		24.0
-30.6	28.8										RUN-2		
-35.6	33.8										RUN-3		
-40.6	38.8										RUN-4		
-45.6	43.8										RUN-5		
-50.6	48.8										RUN-6		-50.6
-55.6	53.8										RUN-7		48.8
-60.6	58.8										RUN-8		
-65.6	63.8										RUN-9		
-70.6	68.8										RUN-10		
-75.6	73.8										RUN-11		

TURKEY POINT COL BORE, TURKEY POINT GP, TURKEY POINT COL GDT 5.30.08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: H. Lyatuu				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550 (Miller)			DRILLER: R. White/ J. Dugger			GROUND WATER (ft)				
BORING NO.: B-707			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: -1.8 ft (NAVD88)			NORTHING: 396,829 US ft (NAD83/90)			EASTING: 875,791 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 152.0 ft			BORING DIAMETER: 4" to 24.9', 3" to 152.0'			CASING DEPTH: 4" to 24.9', 3" to 110.0'			HAMMER (ID): 140 lb. Auto (M06)				
DATE STARTED: 2/13/08			COMPLETED: 2/21/08			CORE SIZE: HQ3			BITS USED: 2 15/16" & 3 7/8 Roller Cones				
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-76.6		Continued from previous page											
-80.6	78.8												LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, few vugs (Lower Fort Thompson Formation) (continued)
-85.6	83.8												
-90.6	88.8												
-95.6	93.8												
-100.6	98.8												
-104.6	102.8												
-105.6	103.8												
-110.6	108.8												
-112.1	110.3	7	7	7									
		4	50/0.2										
-117.1	115.3	10	11	12									
-122.1	120.3	3	6	8									
-127.1	125.3	3	3	6									
-132.3	130.5	2	3	7									
-137.3	135.5	5	4	5									
-142.3	140.5	5	7	8									
-147.3	145.5	5	4	8									

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL.GDT 53008

[illegible]

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 5:30:08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: H. Lyatuu
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger	GROUND WATER (ft)
BORING NO.: B-707	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.8 ft (NAVD88)	NORTHING: 396,829 US ft (NAD83/90)	EASTING: 875,791 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 152.0 ft	CASING DEPTH: 4" to 24.9', 3" to 110.0'	HAMMER (ID): 140 lb. Auto (M06)	
DATE STARTED: 2/13/08	COMPLETED: 2/21/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Begin Coring @ 25.3 ft
-27.1	25.3	3.5	4:26 1:18 1:34 0.42/0.5	(3.5) 100%	(2.9) 83%	RUN-1	(22.1) 94%	(18.3) 78%		LIMESTONE, boundstone, white (5Y8/1), moderately hard, indurated, fossiliferous, little vugs (Upper Fort Thompson Formation) (continued)
-30.6	28.8	5.0	1:29 1:44 2:31 3:23 4:28	(4.6) 92%	(2.8) 56%	RUN-2				28.8ft: white (10YR8/1), hard 28.8ft: loss of circulation
-35.6	33.8	5.0	2:52 1:44 2:27 2:06 2:49	(4.6) 92%	(3.9) 78%	RUN-3				33.8ft: pale yellow (5Y8/2), few vugs, coralline
-40.6	38.8	5.0	1:59 2:02 2:00 1:49 1:37	(4.6) 92%	(4.6) 92%	RUN-4				38.8ft: white (10YR8/1)
-45.6	43.8	5.0	1:42 1:49 4:15 5:12 3:01	(4.8) 96%	(4.1) 82%	RUN-5				43.8ft: white (10YR8/1), to light gray (10YR7/1)
-50.6	48.8	5.0	2:50 3:38 3:28 3:08 2:41	(5.0) 100%	(3.7) 74%	RUN-6	(42.4) 71%	(30.3) 51%		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, few vugs (Lower Fort Thompson Formation)
-55.6	53.8	5.0	2:19 3:15 2:22 1:32 2:44	(4.9) 98%	(4.7) 94%	RUN-7				
-60.6	58.8	5.0	2:16 1:44 1:28 1:31 2:01	(5.0) 100%	(5.0) 100%	RUN-8				
-65.6	63.8	5.0	1:07 0:51 0:10 0:52 1:07	(2.4) 48%	(0.8) 16%	RUN-9				
-70.6	68.8	5.0	2:35 2:10 2:22 1:38 2:48	(4.1) 82%	(2.4) 48%	RUN-10				
-75.6	73.8	5.0	1:34 2:27 3:18 1:57 3:36	(4.6) 92%	(3.4) 68%	RUN-11				
-80.6	78.8	5.0	2:09 2:05 1:23 1:44 0:58	(4.1) 82%	(2.7) 54%	RUN-12				
-85.6	83.8	5.0	0:54 1:02 2:38 3:55 4:55	(4.3) 86%	(3.1) 62%	RUN-13				
-90.6	88.8	5.0	1:40 1:32 1:10 0:41 0:43	(3.8) 76%	(2.9) 58%	RUN-14				
-95.6	93.8	5.0	1:50 0:48 1:51 1:08 1:22	(3.5) 70%	(1.6) 32%	RUN-15				
-100.6	98.8	4.0	4:20	(0.7)	(0.0)	RUN-16				

TURKEY POINT COL CORE TURKEY POINT GP TURKEY POINT COL GDI 5'30"08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: H. Lyatuu
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-550 (Miller)	DRILLER: R. White/ J. Dugger	GROUND WATER (ft)
BORING NO.: B-707	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.8 ft (NAVD88)	NORTHING: 396,829 US ft (NAD83/90)	EASTING: 875,791 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 152.0 ft	CASING DEPTH: 4" to 24.9', 3" to 110.0'	HAMMER (ID): 140 lb. Auto (M06)	
DATE STARTED: 2/13/08	COMPLETED: 2/21/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		L O G	DESCRIPTION AND REMARKS
				REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		
										Continued from previous page
-104.6	102.8		2:15 2:50 2:25	18%	0%					LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, few vugs (Lower Fort Thompson Formation) (continued)
-105.6	103.8	1.0	1:23	(0.0)	(0.0)	RUN-17				102.8ft: No recovery-LIMESTONE and interbedded sand
		5.0	1:06 1:11 1:20 1:29 0:57	0% (0.0) 0%	0% (0.0) 0%	RUN-18				103.8ft: No recovery-LIMESTONE and interbedded sand
-110.6	108.8									-110.6
										Coring Terminated at Elevation -110.6

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL CDT 5/30/08



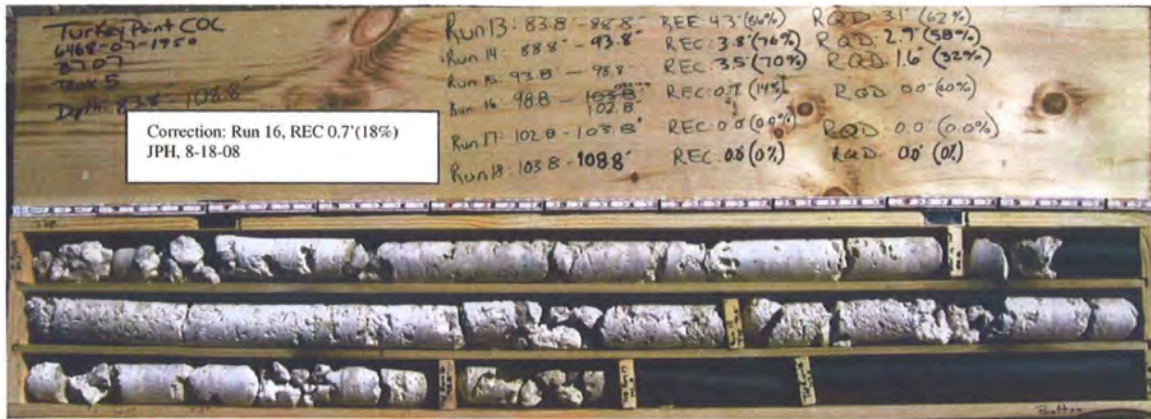
B-707 - Box 1

B-707 - Box 2



B-707 - Box 3

B-707 - Box 4



B-707 - Box 5



GEOTECHNICAL BORING LOG

Prepared By 272 Date 5-30-08Checked By 1112 Date 5-30-08

SHEET 1 OF 4

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: C. Burroughs			
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-750 (Miller)					DRILLER: G.Bilbrey/P.McKorkle/J.Tucker					GROUND WATER (ft)	
BORING NO.: B-708(DH)					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR.	NA
GROUND ELEV.: -1.4 ft (NAVD88)					NORTHING: 396,830 US ft (NAD83/90)					EASTING: 875,886 US ft (NAD83/90)					24 HR.	NA
TOTAL DEPTH: 266.5 ft			BORING DIAMETER: 4" to 266.5'					CASING DEPTH: 4" to 105.8'					HAMMER (ID):140 lb. Auto (07)			
DATE STARTED: 3/7/08			COMPLETED: 3/13/08			CORE SIZE: HQ3			BITS USED: 3 7/8" Roller Cone							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100						
-1.4					Ground Surface											
-1.4	0.0	WOH	WOH	WOH	0								-1.4	0.0	MUCK, dark gray brown (10YR4/2), to black (10YR2/1), moist, mostly organic, strong HCl reaction	
-4.0	2.6												-3.9	2.5		
-6.4	5.0	11	22	23											LIMESTONE, boundstone, gray (10YR6/1), to white (10YR8/1), medium hard, wet, strong HCl reaction, oolitic (Miami Formation) 5.0ft: white (10YR8/1), very soft	
-9.4	8.0	10	10	6												
-11.0	9.6	6	20	13											8.0ft: light gray (10YR7/1), to white (10YR8/1), medium hard 9.6ft: soft	
-14.4	13.0	3	12	15												
-16.9	15.5	11	50/0.5												13.0ft: hard, fossiliferous	
		10	50/0.5													
-21.9	20.5	9	6	7											20.5ft: white (10YR8/1), very soft	
-27.0	25.6															
-27.5	26.1	50/0.5											-26.4	25.0	LIMESTONE, boundstone, white (10YR8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation) 26.1ft: Switched sampling method to coring 26.1ft: white (10YR8/1), with gray (10YR6/1), medium hard, moderately indurated, fossiliferous, recrystallized calcite, coralline, little to some vugs 27.0ft: loss of circulation	
-31.8	30.4															
-36.8	35.4														35.4ft: medium hard to hard, moderately indurated to indurated, little vugs	
-41.8	40.4															
-46.8	45.4														40.4ft: white (10YR8/1), hard, indurated, few vugs	
-51.8	50.4															
-56.8	55.4												-49.0	47.6	LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) 53.3ft: moderately hard, moderately indurated, trace to few shell molds and casts	
-61.8	60.4															
-66.8	65.4														55.4ft: hard, indurated	
-71.8	70.4															
-76.3	74.9														60.4ft: moderately hard to hard, moderately indurated to indurated 63.0 to 65.4ft: friable, fractured	
															65.4ft: indurated, sandy, coralline	
															70.4ft: hard	

TURKEY POINT COL BORE: TURKEY POINT GPJ TURKEY POINT COL GDT: 5/30/08



SHEET 2 OF 4

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: C. Burroughs							
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-750 (Miller)		DRILLER: G.Bilbrey/P.McKorkle/J.Tucker		GROUND WATER (ft)							
BORING NO.: B-708(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA							
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,830 US ft (NAD83/90)		EASTING: 875,886 US ft (NAD83/90)		24 HR. NA							
TOTAL DEPTH: 266.5 ft		BORING DIAMETER: 4" to 266.5'		CASING DEPTH: 4" to 105.8'		HAMMER (ID): 140 lb. Auto (07)							
DATE STARTED: 3/7/08		COMPLETED: 3/13/08		CORE SIZE: HQ3		BITS USED: 3 7/8" Roller Cone							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-76.2					Continued from previous page								
-81.9	80.5												LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-86.9	85.5												80.5ft: moderately hard, moderately indurated, trace to few shell molds and casts
-91.9	90.5												85.5ft: moderately hard to hard, moderately indurated to indurated
-96.9	95.5												
-101.9	100.5												100.5ft: hard, indurated, little shell molds and casts
-106.9	105.5												
-111.9	110.5												
-116.9	115.5	12	10	16									Silty SAND (SM), light gray (5Y7/1), medium dense, wet, fine grained sand, little fines, strong HCl reaction (Tamiami Formation) 115.5ft: Switch sampling method to SPT
-127.4	126.0	8	10	13									126.0ft: greenish gray (10Y6/1), trace shell fragments
-136.9	135.5	8	11	8									135.5ft: trace shell fragments
-144.1	142.7	13	14	15									

TURKEY POINT COL BORE, TURKEY POINT GPJ, TURKEY POINT COL GDT, 5/30/08



SHEET 3 OF 4

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: C. Burroughs	
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-750 (Miller)		DRILLER: G.Bilbrey/P.McKorkle/J.Tucker		GROUND WATER (ft)	
BORING NO.: B-708(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,830 US ft (NAD83/90)		EASTING: 875,886 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 266.5 ft		BORING DIAMETER: 4" to 266.5'		CASING DEPTH: 4" to 105.8'		HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 3/7/08		COMPLETED: 3/13/08		CORE SIZE: HQ3		BITS USED: 3 7/8" Roller Cone	

ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG MOI	L O G	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-151.0					Continued from previous page										
-154.3	152.9	6	8	12											Silty SAND (SM), light gray (5Y7/1), medium dense, wet, fine grained sand, little fines, strong HCl reaction (Tamiami Formation) (continued)
-164.4	163.0	6	14	10											
-174.4	173.0	1	2	6											173.0ft: loose
-184.4	183.0	2	2	6											
-194.4	193.0	1	2	4											193.0ft: weak HCl reaction
-204.4	203.0	3	3	4											
-214.4	213.0	3	5	8											213.0ft: medium dense, strong HCl reaction
-224.4	223.0	9	8	5											Silty SAND (SM), greenish gray (10Y5/1), medium dense, moist, fine grained sand, little fines, strong HCl reaction (Hawthorn Group)

TURKEY POINT COL BORE TURKEY POINT COL GDT 5/30/08



SHEET 4 OF 4

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: C. Burroughs							
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-750 (Miller)		DRILLER: G.Bilbrey/P.McKorkle/J.Tucker		GROUND WATER (ft)							
BORING NO.: B-708(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA							
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,830 US ft (NAD83/90)		EASTING: 875,886 US ft (NAD83/90)		24 HR. NA							
TOTAL DEPTH: 266.5 ft		BORING DIAMETER: 4" to 266.5'		CASING DEPTH: 4" to 105.8'		HAMMER (ID): 140 lb. Auto (07)							
DATE STARTED: 3/7/08		COMPLETED: 3/13/08		CORE SIZE: HQ3		BITS USED: 3 7/8" Roller Cone							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-225.8					Continued from previous page								
-234.4	233.0	7	12	16						708(DH)-22			Silty SAND (SM), greenish gray (10Y5/1), medium dense, moist, fine grained sand, little fines, strong HCl reaction (Hawthorn Group) (continued)
-244.4	243.0	10	15	21						708(DH)-23			243.0ft: dense, no HCl reaction
-254.3	252.9	4	10	19						708(DH)-24			252.9ft: medium dense
-266.4	265.0	5	12	30						708(DH)-25			256.0ft: dense
													Boring Terminated at Elevation -267.9 ft

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5:30:08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409	MACTEC PROJECT NO.: 6468-07-1950	COUNTY: Miami-Dade	GEOLOGIST: C. Burroughs
SITE DESCRIPTION: Turkey Point COL	DRILL MACHINE: CME-750 (Miller)	DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	GROUND WATER (ft)
BORING NO.: B-708(DH)	DRILL METHOD: Mud Rotary/ Core	SAMPLE METHODS: SPT/Core	0 HR. NA
GROUND ELEV.: -1.4 ft (NAVD88)	NORTHING: 396,830 US ft (NAD83/90)	EASTING: 875,886 US ft (NAD83/90)	24 HR. NA
TOTAL DEPTH: 266.5 ft	CASING DEPTH: 4" to 105.8'	HAMMER (ID): 140 lb. Auto (07)	
DATE STARTED: 3/7/08	COMPLETED: 3/13/08	CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC (ft) %	RQD (ft) %	SAMP. NO.	REC. (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS
										Begin Coring @ 26.1 ft
-27.5	26.1	4.3	1:11/0.3 1:49 3:37 5:56 5:36	(4.2) 98%	(0.4) 9%	RUN-1	(19.7) 92%	(11.7) 54%		LIMESTONE, boundstone, white (10YR8/1), hard, wet, strong HCl reaction (Upper Fort Thompson Formation) (continued)
-31.8	30.4	5.0	2:37 2:16 3:02 2:18 3:41	(3.3) 66%	(0.7) 14%	RUN-2				26.1ft: white (10YR8/1), with gray (10YR6/1), medium hard, moderately indurated, fossiliferous, recrystallized calcite, coralline, little to some vugs 27.0ft: loss of circulation
-36.8	35.4	5.0	2:15 3:08 3:31 3:25 6:01	(5.0) 100%	(3.7) 74%	RUN-3				35.4ft: medium hard to hard, moderately indurated to indurated, little vugs
-41.8	40.4	5.0	2:33 2:06 2:58 3:01 3:27	(5.0) 100%	(5.0) 100%	RUN-4				40.4ft: white (10YR8/1), hard, indurated, few vugs
-46.8	45.4	5.0	1:49 2:35 2:26 1:58 1:34	(5.0) 100%	(4.7) 94%	RUN-5				45.4 to 47.6ft: gray (10YR6/1), trace vugs
-51.8	50.4	5.0	2:42 2:16 1:36 0:55 0:35	(4.8) 96%	(3.5) 70%	RUN-6	(50.1) 75%	(30.8) 46%		LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation)
-56.8	55.4	5.0	0:58 0:45 1:09 1:48 4:43	(5.0) 100%	(4.2) 84%	RUN-7				53.3ft: moderately hard, moderately indurated, trace to few shell molds and casts
-61.8	60.4	5.0	2:02 2:08 1:29 0:36 0:29	(3.2) 64%	(2.4) 48%	RUN-8				55.4ft: hard, indurated
-66.8	65.4	5.0	0:15 0:41 0:30 2:00 1:35	(1.9) 38%	(0.6) 12%	RUN-9				60.4ft: moderately hard to hard, moderately indurated to indurated 63.0 to 65.4ft: friable, fractured
-71.8	70.4	4.5	1:56 2:50 3:15 1:33	(3.2) 71%	(1.9) 42%	RUN-10				65.4ft: indurated, sandy, coralline
-76.3	74.9	5.6	3:25/0.5 1:21/1.6 1:20 1:26 1:43 1:50	(4.2) 75%	(3.2) 57%	RUN-11				70.4ft: hard
-81.9	80.5	5.0	0:40 0:48 0:24 1:01 2:37	(3.2) 64%	(0.7) 14%	RUN-12				80.5ft: moderately hard, moderately indurated, trace to few shell molds and casts
-86.9	85.5	5.0	1:35 1:28 6:46 2:46 2:52	(4.7) 94%	(2.9) 58%	RUN-13				85.5ft: moderately hard to hard, moderately indurated to indurated
-91.9	90.5	5.0	1:17 1:49 1:00 1:04 1:44	(4.4) 88%	(2.9) 58%	RUN-14				
-96.9	95.5	5.0	0:26 0:40 0:51 1:18 1:50	(2.8) 56%	(0.4) 8%	RUN-15				
-101.9	100.5									

TURKEY POINT COL CORE TURKEY POINT GP TURKEY POINT COL GDT 5/30/08



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade	GEOLOGIST: C. Burroughs
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-750 (Miller)		DRILLER: G.Bilbrey/P.McKorkle/J.Tucker	
BORING NO.: B-708(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core	
GROUND ELEV.: -1.4 ft (NAVD88)		NORTHING: 396,830 US ft (NAD83/90)		EASTING: 875,886 US ft (NAD83/90)	
TOTAL DEPTH: 266.5 ft		CASING DEPTH: 4" to 105.8'			HAMMER (ID): 140 lb. Auto (07)
DATE STARTED: 3/7/08		COMPLETED: 3/13/08		CORE SIZE: HQ3	CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-106.9	105.5	5.0	0:55 1:50 1:20 0:58 1:23	(4.9) 98%	(4.2) 84%	RUN-16 708(DH)- CS-07				100.5ft: hard, indurated, little shell molds and casts LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-111.9	110.5	5.0	1:43 1:10 1:33 1:05 1:08	(3.4) 68%	(1.1) 22%	RUN-17				
-116.9	115.5	5.0	0:52 1:04 1:01 1:04 0:30	(1.6) 32%	(0.0) 0%	RUN-18				
							(0.0) 0%	(NA)		-115.4 -116.9 Silty SAND (SM), light gray (5Y7/1), medium dense, wet, fine grained sand, little fines, strong HCl reaction (Tamiami Formation) Coring Terminated at Elevation -116.9

TURKEY POINT COL CORE TURKEY POINT.GPJ TURKEY POINT COL.GDT 5/30/08



B-708 (DH) - Box 1



B-708 (DH) - Box 2



B-708 (DH) - Box 3



B-708 (DH) - Box 4



B-708 (DH) - Box 5



B-708 (DH) - Box 6



GEOTECHNICAL BORING LOG

Prepared By 222 Date 5-30-08Checked By 10/11 Date 6-30-08

SHEET 1 OF 3

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: S. Woodham				
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-550X (ATL)					DRILLER: R. Landeros/P. Pitts					GROUND WATER (ft)		
BORING NO.: B-709					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core					0 HR. NA		
GROUND ELEV.: -1.3 ft (NAVD88)					NORTHING: 396,761 US ft (NAD83/90)					EASTING: 875,841 US ft (NAD83/90)					24 HR. NA		
TOTAL DEPTH: 150.0 ft			BORING DIAMETER: 4" to 28.5', 3" to 150.0'					CASING DEPTH: 4" to 28.5', 3" to 120.0'					HAMMER (ID):140 lb. Auto (MEC-05)				
DATE STARTED: 2/26/08			COMPLETED: 3/4/08			CORE SIZE: HQ3			BITS USED: 2 15/16 & 4 7/8" Roller Cone								
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100							
-1.3					Ground Surface										-1.3 0.0		
-1.3	0.0	WOH	WOH	WOH	0						709-1				MUCK, very dark brown (10YR2/2), very soft, moist, organic		
-3.8	2.5										709-2A&B				-4.6 3.3		
		WOH	5	8													
-6.6	5.3										709-3				LIMESTONE, boundstone, pale yellow (2.5Y8/2), very soft, wet, strong HCl reaction, fossiliferous, oolitic (Miami Formation)		
-8.8	7.5	8	8	4							709-4				5.3ft: white (5Y8/1)		
		4	9	4							709-5				7.5ft: white (10YR8/1)		
-11.3	10.0										709-6				10.0ft: soft		
-13.8	12.5	8	12	9							709-7						
-16.3	15.0	11	14	11							709-8				18.5ft: very soft		
-19.8	18.5	10	18	11							709-9						
		6	6	8													
-24.8	23.5										709-10						
		3	4	12							RUN-1				-27.3 26.0		
-29.8	28.5														LIMESTONE, boundstone, white, (10YR8/1), hard, wet, strong HCl reaction, trace shell fragments (Upper Fort Thompson Formation)		
-30.5	29.2	40	50/0.2												29.2ft: Switched sampling method to coring		
															29.2ft: white (2.5Y8/1), hard, indurated, coralline, fossiliferous, recrystallized calcite, strong HCl reaction, some vugs		
-35.3	34.0										RUN-2				30.0ft: loss of circulation		
															34.0ft: few vugs		
-40.3	39.0										RUN-3						
-45.3	44.0										RUN-4				44.0ft: white (2.5Y8/1) to 45.6 then gray (2.5Y6/1) to 48.4ft, some vugs		
-50.3	49.0										RUN-5				-49.7 48.4		
															LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation)		
-55.3	54.0										RUN-6				49.0ft: moderately hard, moderately indurated, few vugs		
															54.0ft: hard, indurated		
-60.3	59.0										RUN-7						
-65.3	64.0										RUN-8						
-70.3	69.0										RUN-9				69.0ft: moderately hard to hard, moderately indurated to indurated, sandy, some vugs		
-75.3	74.0										RUN-10						

TURKEY POINT COL BORE TURKEY POINT COL GDT 5/30/08



SHEET 2 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: S. Woodham				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550X (ATL)			DRILLER: R. Landeros/P. Pitts			GROUND WATER (ft)				
BORING NO.: B-709			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: -1.3 ft (NAVD88)			NORTHING: 396,761 US ft (NAD83/90)			EASTING: 875,841 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 150.0 ft			BORING DIAMETER: 4" to 28.5", 3" to 150.0"			CASING DEPTH: 4" to 28.5", 3" to 120.0"			HAMMER (ID): 140 lb. Auto (MEC-05)				
DATE STARTED: 2/26/08			COMPLETED: 3/4/08			CORE SIZE: HQ3			BITS USED: 2 15/16 & 4 7/8" Roller Cone				
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-76.1		Continued from previous page											
-80.3	79.0												74.0ft: hard, indurate74.0 to 79.0ft: possible interbedded sand LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued) 79.0ft: no recovery, inner barrel sand-locked 80.3ft: Switch sampling method to SPT 80.3ft: LIMESTONE, boundstone, white (2.5Y8/1), soft, wet, strong HCl reaction, some coarse grained sand 81.8ft: Switch sampling method to coring 81.8ft: LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few coarse grained sand, trace shell molds 84.0ft: extremely indurated, few vugs 89.0ft: indurated 99.0ft: moderately hard, some vugs, little to some shell molds and casts 104.0ft: hard 114.0ft: light gray (5Y7/1) Silty SAND (SM), greenish gray (10Y6/1), medium dense, wet, little fines, HCl reaction (Tamiami Formation) 120.5ft: Switch sampling method to SPT 123.5ft: moist, friable cemented zones 125.0ft: half of circulation returned 133.5ft: very loose 138.5ft: medium dense, trace shell fragments
-81.6	80.3												
-83.1	81.8	6	12	17									
-85.3	84.0												
-90.3	89.0												
-95.3	94.0												
-100.3	99.0												
-105.3	104.0												
-110.3	109.0												
-115.3	114.0												
-121.8	120.5	6	7	9									
-124.8	123.5	18	18	7									
-129.8	128.5	6	8	11									
-134.8	133.5	WOH	WOH	2									
-139.8	138.5	7	9	11									
-144.8	143.5	6	6	12									
-149.8	148.5	5	6	10									



SHEET 3 OF 3

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: S. Woodham				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-550X (ATL)			DRILLER: R. Landeros/P. Pitts			GROUND WATER (ft)				
BORING NO.: B-709			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: -1.3 ft (NAVD88)			NORTHING: 396,761 US ft (NAD83/90)			EASTING: 875,841 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 150.0 ft			BORING DIAMETER: 4" to 28.5', 3" to 150.0'			CASING DEPTH: 4" to 28.5', 3" to 120.0'			HAMMER (ID): 140 lb. Auto (MEC-05)				
DATE STARTED: 2/26/08			COMPLETED: 3/4/08			CORE SIZE: HQ3			BITS USED: 2 15/16 & 4 7/8" Roller Cone				
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-150.9					Continued from previous page								
													Boring Terminated at Elevation -151.3 ft

TURKEY POINT COL BORE TURKEY POINT.GPJ TURKEY POINT COL GDT 5/30/08



SHEET 1 OF 2

BECHTEL PROJECT NO.: 25409				MACTEC PROJECT NO.: 6468-07-1950				COUNTY: Miami-Dade		GEOLOGIST: S. Woodham			
SITE DESCRIPTION: Turkey Point COL				DRILL MACHINE: CME-550X (ATL)				DRILLER: R. Landeros/P. Pitts				GROUND WATER (ft)	
BORING NO.: B-709				DRILL METHOD: Mud Rotary/ Core				SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.3 ft (NAVD88)				NORTHING: 396,761 US ft (NAD83/90)				EASTING: 875,841		US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 150.0 ft				CASING DEPTH: 4" to 28.5', 3" to 120.0'						HAMMER (ID): 140 lb. Auto (MEC-05)			
DATE STARTED: 2/26/08		COMPLETED: 3/4/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)							
ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC (ft) %RQD (ft) %		SAMP. NO.	STRATA REC (ft) %RQD (ft) %		L O G	DESCRIPTION AND REMARKS			
										Begin Coring @ 29.2 ft			
-30.5	29.2	4.8	1:42 1:20 1:30 1:10 2:00/0.8	(4.2) 88%	(2.5) 52%	RUN-1	(16.7) 87%	(12.7) 66%		LIMESTONE, boundstone, white, (10YR8/1), hard, wet, strong HCl reaction, trace shell fragments (Upper Fort Thompson Formation) (continued) 29.2ft: white (2.5Y8/1), hard, indurated, coralline, fossiliferous, recrystallized calcite, strong HCl reaction, some vugs			
-35.3	34.0	5.0	0:33 1:09 1:15 1:12 1:30	(3.9) 78%	(2.9) 58%	RUN-2				30.0ft: loss of circulation 34.0ft: few vugs			
-40.3	39.0	5.0	1:10 1:12 1:13 0:51 1:06	(5.0) 100%	(4.5) 90%	RUN-3							
-45.3	44.0	5.0	0:44 1:20 1:12 1:04 1:58	(4.2) 84%	(3.4) 68%	RUN-4				44.0ft: white (2.5Y8/1) to 45.6 then gray (2.5Y6/1) to 48.4ft, some vugs			
-50.3	49.0	5.0	0:57 0:43 1:06 1:11 1:12	(4.9) 98%	(4.0) 80%	RUN-5	(43.8) 66%	(26.6) 40%		48.4			
-55.3	54.0	5.0	0:52 0:55 0:20 0:45 0:30	(3.9) 78%	(2.6) 52%	RUN-6				LIMESTONE, boundstone, white (10YR8/1), hard, indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) 49.0ft: moderately hard, moderately indurated, few vugs			
-60.3	59.0	5.0	0:37 0:35 1:12 1:02 0:42	(4.6) 92%	(4.6) 92%	RUN-7				54.0ft: hard, indurated			
-65.3	64.0	5.0	0:36 0:39 0:56 0:36 0:10	(3.3) 66%	(1.5) 30%	RUN-8							
-70.3	69.0	5.0	0:15 0:10 0:36 0:57 1:23	(3.0) 60%	(0.4) 8%	RUN-9				69.0ft: moderately hard to hard, moderately indurated to indurated, sandy, some vugs			
-75.3	74.0	5.0	0:30 0:27 0:25 0:20 0:47	(1.6) 32%	(0.0) 0%	RUN-10				74.0ft: hard, indurate74.0 to 79.0ft: possible interbedded sand			
-80.3	79.0	1.3	0:15 0:07/0.3 N=29	(0.0) 0%	(0.0) 0%	RUN-11				79.0ft: no recovery, inner barrel sand-locked			
-81.6	80.3	2.2	1:15 1:45 0:36/0.2	(1.8) 82%	(0.9) 41%	RUN-12				80.3ft: Switch sampling method to SPT 80.3ft: LIMESTONE, boundstone, white (2.5Y8/1), soft, wet, strong HCl reaction, some coarse grained sand			
-83.1	81.8	5.0	1:36 1:15 5:37 3:41 2:28	(3.5) 70%	(1.3) 26%	RUN-13				80.3ft: Switch sampling method to coring 81.8ft: LIMESTONE, boundstone, white (10YR8/1), hard, indurated, fossiliferous, strong HCl reaction, few coarse grained sand, trace shell molds			
-85.3	84.0	5.0	3:32 1:09 0:54 1:25 0:26	(0.5) 10%	(0.4) 8%	RUN-14				84.0ft: extremely indurated, few vugs			
-90.3	89.0	5.0	1:25 1:05 0:26 0:31 0:21	(2.3) 46%	(1.2) 24%	RUN-15				89.0ft: indurated			
-95.3	94.0	5.0	0:51 0:55 0:27 0:40 0:46	(4.9) 98%	(3.3) 66%	RUN-16				99.0ft: moderately hard, some vugs, little to some shell molds and casts			
-100.3	99.0												
-105.3	104.0												

TURKEY POINT COL CORE TURKEY POINT GP TURKEY POINT COL GDI 53008



SHEET 2 OF 2

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: S. Woodham	
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-550X (ATL)		DRILLER: R. Landeros/P. Pitts		GROUND WATER (ft)	
BORING NO.: B-709		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA	
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 396,761 US ft (NAD83/90)		EASTING: 875,841 US ft (NAD83/90)		24 HR. NA	
TOTAL DEPTH: 150.0 ft		CASING DEPTH: 4" to 28.5', 3" to 120.0'				HAMMER (ID): 140 lb. Auto (MEC-05)	
DATE STARTED: 2/26/08		COMPLETED: 3/4/08		CORE SIZE: HQ3		CORE BARREL TYPE: Triple Tube Wireline (Split inner liners)	

ELEV. (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
				REC (ft) %	RQD (ft) %		REC (ft) %	RQD (ft) %		
										Continued from previous page
-110.3	109.0	5.0	1:10 0:53 0:46 1:00 0:40	(5.0) 100%	(4.0) 80%	RUN-17				104.0ft: hard Limestone, boundstone, white (10YR8/1), hard, indurated, trace vugs, fossiliferous, strong HCl reaction (Lower Fort Thompson Formation) (continued)
-115.3	114.0	5.0	0:30 1:50 1:29 0:43 0:31	(3.4) 68%	(1.8) 36%	RUN-18				
-120.3	119.0	5.0	0:38 0:37 0:24 0:19 0:25	(0.5) 10%	(0.0) 0%	RUN-19	(0.0) 0%	(NA)		114.0ft: light gray (5Y7/1) Silty SAND (SM), greenish gray (10Y6/1), medium dense, wet, little fines, HCl reaction (Tamiami Formation)
										Coring Terminated at Elevation -120.3

TURKEY POINT COL CORE TURKEY POINT GPJ TURKEY POINT COL GDI 5/30/08



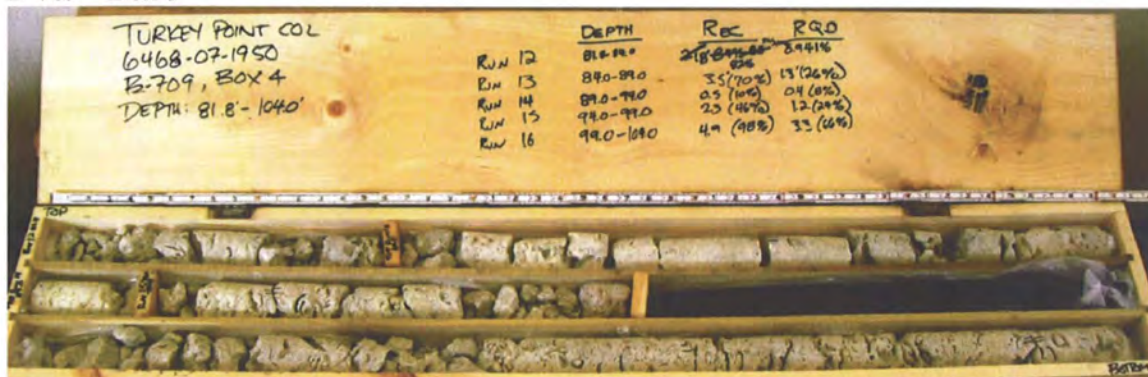
B-709 - Box 1



B-709 - Box 2



B-709 - Box 3



B-709 - Box 4



B-709 - Box 5



GEOTECHNICAL BORING LOG

Prepared By JDH Date 8-19-08Checked By STC Date 8/19/08

SHEET 1 OF 4

BECHTEL PROJECT NO.: 25409		MACTEC PROJECT NO.: 6468-07-1950		COUNTY: Miami-Dade		GEOLOGIST: O. Rodriguez							
SITE DESCRIPTION: Turkey Point COL		DRILL MACHINE: CME-75 (CLT)		DRILLER: J. Warren/ C. Sloan/ M. Harvey		GROUND WATER (ft)							
BORING NO.: B-710(DH)		DRILL METHOD: Mud Rotary/ Core		SAMPLE METHODS: SPT/Core		0 HR. NA							
GROUND ELEV.: -1.3 ft (NAVD88)		NORTHING: 397,087 US ft (NAD83/90)		EASTING: 875,793 US ft (NAD83/90)		24 HR. NA							
TOTAL DEPTH: 250.9 ft		BORING DIAMETER: 4" to 18.5', 3" to 250.9'		CASING DEPTH: 4" to 18.5', 3" to 123.0'		HAMMER (ID): 140 lb. Auto (MEC-09)							
DATE STARTED: 4/2/08		COMPLETED: 4/9/08		CORE SIZE: HQ3		BITS USED: 2 15/16" & 4.5" Tricones							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
-1.3					Ground Surface								
-1.3	0.0	WOH	WOH	WOH	0								0.0
-3.8	2.5	7	8	10									-3.3
-6.1	4.8	8	8	7									-2.0
-8.8	7.5	11	4	4									
-11.1	9.8	3	4	5									
-14.1	12.8	4	6	5									
-16.3	15.0	8	50/0.4										
-18.1	16.8												
-22.8	21.5												
-27.6	26.3												
-32.6	31.3												
-37.6	36.3												
-42.6	41.3												
-47.6	46.3												
-52.6	51.3												
-57.6	56.3												
-62.6	61.3												
-67.6	66.3												
-72.6	71.3												
-73.5	72.2												

SEE LEGEND FOR ROCK HARDNESS CRITERIA BASED ON SPT DATA

Standard penetration tests performed for this boring from 0.0 to 15.0ft not valid due to nonconforming hammer drop distance. Boring redrilled from 0.0 to 15.0ft at offset location as B-710(DH)R.

MUCK, no recovery

LIMESTONE, boundstone, white (2.5Y8/1), very soft, wet, strong HCl reaction, little fine grained sand, oolitic (Miami Formation)

7.5ft: little to few fine grained sand

12.5ft: trace sand

15.0ft: hard

16.8ft: Switch sampling method to coring

16.8ft: white (2.5Y8/1), medium hard, moderately indurated, fossiliferous, few to little locally interconnected vugs

LIMESTONE, boundstone, white (2.5Y8/1), medium hard to moderately hard, moderately indurated, fossiliferous, coralline, few vugs (Upper Fort Thompson Formation)

27.0ft: loss of circulation

31.3ft: moderately hard

46.3ft: white (2.5Y8/1), to 46.6ft then greenish gray (10Y6/1), to 48.5ft

LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, fossiliferous, few vugs (Lower Fort Thompson Formation)

51.3ft: trace shell molds and casts

56.3ft: moderately hard, indurated

66.3 to 68.3ft: possible sand layer

71.3ft: hard

TURKEY POINT COL BORE TURKEY POINT GPJ TURKEY POINT COL GDT 8-18-08



SHEET 2 OF 4

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: O. Rodriguez					
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-75 (CLT)			DRILLER: J. Warren/ C. Sloan/ M. Harvey			GROUND WATER (ft)					
BORING NO.: B-710(DH)			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA					
GROUND ELEV.: -1.3 ft (NAVD88)			NORTHING: 397,087 US ft (NAD83/90)			EASTING: 875,793 US ft (NAD83/90)			24 HR. NA					
TOTAL DEPTH: 250.9 ft			BORING DIAMETER: 4" to 18.5', 3" to 250.9'			CASING DEPTH: 4" to 18.5', 3" to 123.0'			HAMMER (ID):140 lb. Auto (MEC-09)					
DATE STARTED: 4/2/08			COMPLETED: 4/9/08			CORE SIZE: HQ3			BITS USED: 2 15/16" & 4.5" Tricones					
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100				
-76.1					Continued from previous page									
-77.6	76.3											RUN-14		LIMESTONE, boundstone, white (2.5Y8/1), moderately hard, moderately indurated, fossiliferous, few vugs (Lower Fort Thompson Formation) (continued)
-82.6	81.3											RUN-15		76.3ft: moderately hard, moderately indurated
-87.6	86.3											RUN-16		81.3ft: little vugs, few shell molds and casts
-92.6	91.3											RUN-17		86.3ft: few shell molds and casts
-97.6	96.3											RUN-18		91.3ft: sandy
-102.6	101.3											RUN-19		101.3ft: medium hard, little shell molds and casts
-107.6	106.3											RUN-20		106.3ft: moderately hard to friable, few shell molds and casts
-112.6	111.3											RUN-21		
-117.6	116.3											RUN-22		115.3ft: POORLY GRADED SAND (SP), pale yellow (2.5Y8/3), medium dense, strong HCl reaction, trace fine to coarse gravel-sized cemented sand fragments (Tamiami Formation)
-122.6	121.3	7	6	7								710(DH)-8		116.3ft: limestone fragments
-129.7	128.4	10	15	17								710(DH)-9		121.3ft: Switch sampling method to SPT
-139.7	138.4	8	11	20								710(DH)-10		126.3ft: Silty SAND (SM), pale yellow (2.5Y8/3), dense, strong HCl reaction, trace fine to coarse gravel-sized cemented sand fragments
-149.7	148.4	23	35	44								710(DH)-11		138.4ft: greenish gray (10Y6/1)
														148.4ft: very dense, trace shell fragments

TURKEY POINT COL BORE TURKEY POINT GP TURKEY POINT COL GDT S/18/08

BECHTEL PROJECT NO.: 25409					MACTEC PROJECT NO.: 6468-07-1950					COUNTY: Miami-Dade			GEOLOGIST: O. Rodriguez		
SITE DESCRIPTION: Turkey Point COL					DRILL MACHINE: CME-75 (CLT)					DRILLER: J. Warren/ C. Sloan/ M. Harvey				GROUND WATER (ft)	
BORING NO.: B-710(DH)					DRILL METHOD: Mud Rotary/ Core					SAMPLE METHODS: SPT/Core				0 HR. NA	
GROUND ELEV.: -1.3 ft (NAVD88)					NORTHING: 397,087 US ft (NAD83/90)					EASTING: 875,793 US ft (NAD83/90)				24 HR. NA	
TOTAL DEPTH: 250.9 ft			BORING DIAMETER: 4" to 18.5', 3" to 250.9'					CASING DEPTH: 4" to 18.5', 3" to 123.0'				HAMMER (ID):140 lb. Auto (MEC-09)			
DATE STARTED: 4/2/08			COMPLETED: 4/9/08			CORE SIZE: HQ3			BITS USED: 2 15/16" & 4.5" Tricones						
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	▼ MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
-150.9					Continued from previous page										
-159.7	158.4	7	10	23							710(DH)-12			Silty SAND (SM), pale yellow (2.5Y8/3), dense, strong HCl reaction, trace fine to coarse gravel-sized cemented sand fragments (continued)	
-169.7	168.4	18	45	50/0.3							710(DH)-13			158.6ft: dense	
-179.7	178.4	8	5	10							710(DH)-14			168.4ft: very dense	
-190.3	189.0	6	15	19							710(DH)-15			178.4ft: medium dense	
-199.7	198.4	17	22	30							710(DH)-16			189.0ft: dense	
-209.7	208.4	10	11	18							710(DH)-17			Sandy SILT (ML), greenish gray (10Y6/1), hard, wet, strong HCl reaction, cemented silt fragments	
-219.7	218.4	14	16	30							710(DH)-18			208.4ft: very stiff	
														218.4ft: hard	
														-223.3	222.0



SHEET 4 OF 4

BECHTEL PROJECT NO.: 25409			MACTEC PROJECT NO.: 6468-07-1950			COUNTY: Miami-Dade			GEOLOGIST: O. Rodriguez				
SITE DESCRIPTION: Turkey Point COL			DRILL MACHINE: CME-75 (CLT)			DRILLER: J. Warren/ C. Sloan/ M. Harvey			GROUND WATER (ft)				
BORING NO.: B-710(DH)			DRILL METHOD: Mud Rotary/ Core			SAMPLE METHODS: SPT/Core			0 HR. NA				
GROUND ELEV.: -1.3 ft (NAVD88)			NORTHING: 397,087 US ft (NAD83/90)			EASTING: 875,793 US ft (NAD83/90)			24 HR. NA				
TOTAL DEPTH: 250.9 ft			BORING DIAMETER: 4" to 18.5', 3" to 250.9'			CASING DEPTH: 4" to 18.5', 3" to 123.0'			HAMMER (ID): 140 lb. Auto (MEC-09)				
DATE STARTED: 4/2/08			COMPLETED: 4/9/08			CORE SIZE: HQ3			BITS USED: 2 15/16" & 4.5" Tricones				
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		
-225.7		Continued from previous page											
-229.7	228.4	15	16	25						710(DH)-19			Silty SAND (SM), greenish gray (10Y6/1), dense wet strong HCl reaction, trace shell fragments (Hawthorn Group) (continued)
-239.7	238.4	12	14	20						710(DH)-20			POORLY GRADED SAND (SP), light greenish gray (10Y7/1), dense wet strong HCl reaction
-250.6	249.3	9	13	22						710(DH)-21			Silty SAND (SM), greenish gray (10Y6/1), dense, wet, strong HCl reaction
													Note: Standard penetration tests performed for this boring from 0.0 to 15.0ft not valid due to nonconforming hammer drop distance. Boring redrilled from 0.0 to 15.0ft at offset location as B-710(DH)R. Boring Terminated at Elevation -252.2 ft

TURKEY POINT COL BORE, TURKEY POINT GPJ, TURKEY POINT COL GDT 8/18/08